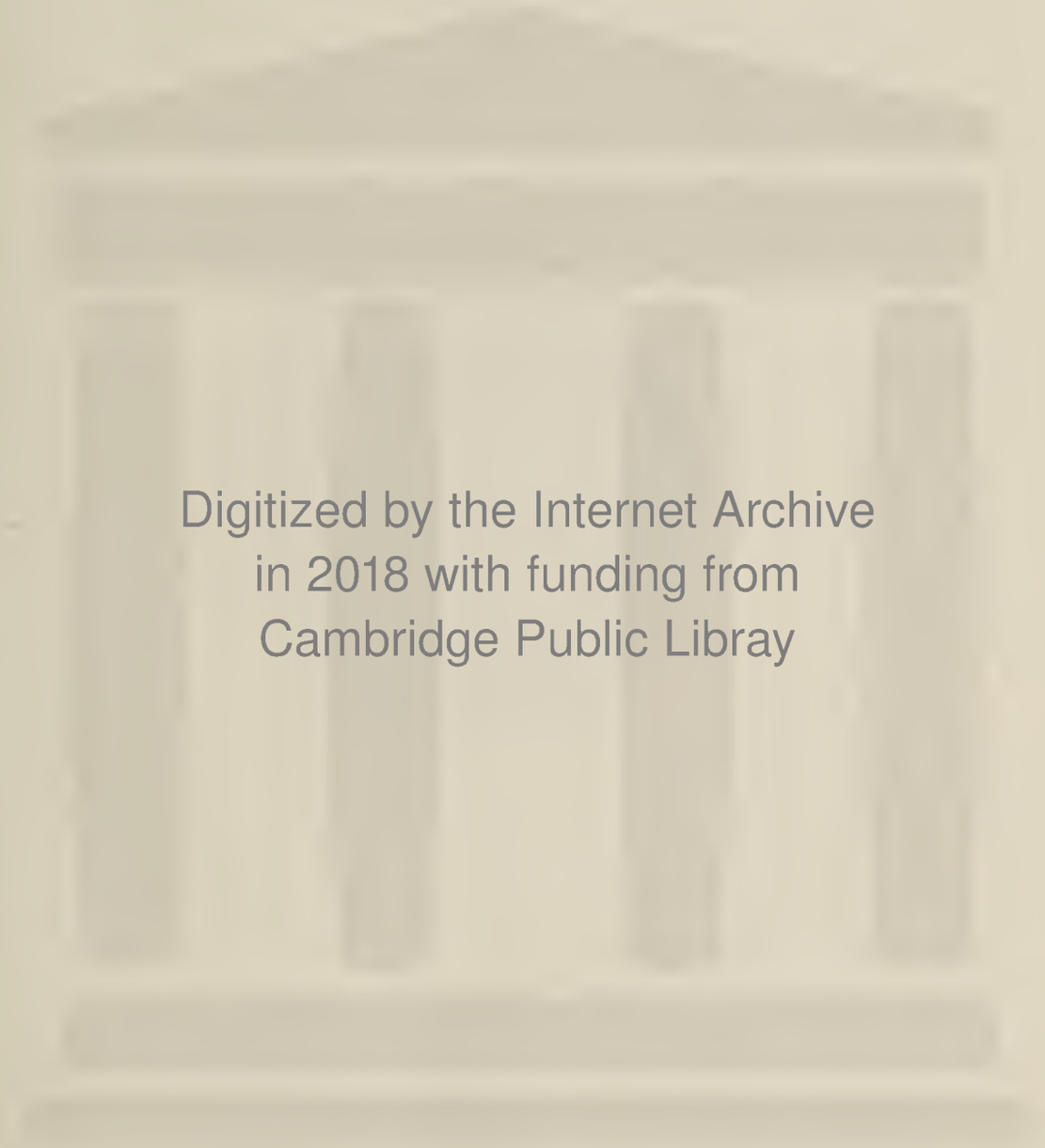

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City of Cambridge

THE MAYOR'S ADDRESS

AT THE

ORGANIZATION OF THE CITY GOVERNMENT

JANUARY 3, 1898

AND

THE ANNUAL REPORTS

MADE TO THE CITY COUNCIL

FOR THE YEAR 1897

PUBLISHED BY ORDER OF THE CITY COUNCIL
UNDER THE DIRECTION OF THE
CITY CLERK

Cambridge, Mass.:
Press of Lombard & Caustic,
26 a Brattle St.

ADDRESS

OF

HON. ALVIN F. SORTWELL

MAYOR

TO THE

CITY COUNCIL

January 3, 1898

Gentlemen of the City Council: —

We come together as the representatives of nearly ninety thousand people to take charge of the financial affairs of a city incorporated in 1846, which succeeded to a town settled in 1630 and whose balance-sheet last year showed receipts and expenditures of nearly $4,000,000.

We have been chosen by the freely expressed suffrages of the voters of this old and historic community, after proper consideration given to the qualifications of those whose names were before the people as candidates.

The endorsement given to us, who were candidates for re-election and extended by the voters to those members of the City Council of 1897 who were chosen to represent

our City in the Legislature, would seem to indicate that the policy and conduct of affairs by the administration of 1897 was acceptable to the people.

I again enter upon the duties of the office with the determination to give to it my best efforts in the administration of its financial affairs; with the desire to secure the best qualified men for appointment on our Boards and Commissions, and with the intention of securing honest, faithful and conscientious men in our police and fire departments. In regard to appointments, the public should understand that the Mayor is hampered by the fact that the services of men best fitted and best equipped for discharging the requirements of our various positions cannot always be secured, because of business reasons or a disinclination to enter public life.

The past year has seen the beginning of a magnificent Latin School which will add to the already well established reputation of our City as an educational centre; the carrying forward of work on the banks of the Charles River, which will enure to the value of our taxable property, enhance the beauty of our City, and increase the health, comfort and delight of our citizens for years to come; and the completion of water works of great value and benefit.

To be sure, all these improvements and additions take large sums of money, but so long as we move forward in line with other cities and other communities, just so long must we continue to expend what to previous generations would seem fabulous amounts. There can be no progress

without large expenditures and to stand still is not possible for a city of our importance.

Our tax rate for last year was $17.40 per thousand, being the highest since 1878, when the rate was $18. The causes for this are well known, but I desire to call your attention to a few facts which should be considered when making comparisons with other cities.

The cities of the Commonwealth of about our own size, viz: Worcester, Lowell, Fall River and Lynn had the use of revenues received from liquor licenses, ranging from $1.00 to $1.50 per thousand, and they did not have a double Metropolitan Sewer assessment of $1.60 per thousand to pay to the Commonwealth.

I use the facts only to show why these cities had a financial advantage over Cambridge last year. As an offset to their financial gain, Cambridge does not have saloons and does have its sewerage carried out to sea instead of being deposited in or near its borders.

We should aim to give our citizens a lower tax rate for the coming year. It can be done; it must be done; not by niggardly economy; not by throwing forward to succeeding city councils what rightfully belongs for us to do; nor by issuing bonds for current expenses: but by faithful, careful and painstaking consideration of the appropriations asked for by the various departments, and granting only such amounts as are absolutely necessary for the proper carrying forward of their work.

The Auditor's report gives you full details of our finances and many statistics and comparisons to aid you

in determining your action the coming year. I shall not weary you with figures, but will briefly read a short summary of our condition at the beginning of the financial year.

The bonded water debt, Dec. 1st, 1897, was	$2,961,600 00
The value of the sinking fund held for said debt	464,138 28
Net value bonded water debt	$2,497,461 72
The bonded municipal debt, Dec. 1st, 1897, was	$3,623,500 00
The value of the sinking fund held therefor	714,973 91
Net bonded debt (exclusive of water debt)	$2,908,526 09
New bonded water debt created in 1897	$375,000 00

New bonded city debt created in 1897 was as follows:

For Parks	$150,000 00
Clay Land Work	20,000 00
Street Widenings	11,000 00
School-houses	109,500 00
Sidewalks	20,000 00
	$310,500 00

The percentage of net bonded debt, exclusive of water debt, Dec. 1st, 1897, was .0339 per cent on the valuation of 1897. Of this, .0185 per cent was within our legal debt limit, and .0154 per cent was outside our legal debt, by authority of special acts of the Legislature granting such excess.

In figures, $1,320,000 of our bonded city debt is outside of our debt limit as fixed by statute law, $400,000 being for "Harvard Bridge and Avenue approaching,"

$850,000 for "Parks," and $70,000 for "Clay Land Work."

The valuation in 1897 was:

Personal property	$16,302,545 00
Real estate	70,339,200 00
Total	$86,641.745 00

Borrowing capacity for 1898 will be:

For City Expenses	$372,935 59
Clay Lands	50,000 00
Parks	150,000 00
Total	$572,925 59
Net valuation (average for three years)	$82.869.130 00

The gain in borrowing capacity is nearly $100,000 over that of last year and the gain in the average three years' net valuation is over $3,000,000.

Believing that the time had come when our City could issue 3 1-2 per cent. bonds, I requested the City Treasurer to draw his order accordingly when the first issue was authorized. We had five sales of 3 1-2 per cent bonds during the last financial year, all of which were very satisfactory. Our bonds have been eagerly sought by from twelve to eighteen bidders at every sale, and the last sale made in December, since the close of the financial year, was on a .0319 per cent basis, and I am pleased to state that our bonds today stand better in the market than those of the city of Boston.

The total Water and City Bonds issued the past year

were $685,500 and the saving in interest by issuing at 3 1-2 per cent instead of 4 per cent as heretofore, amounts to $3,427.50 per annum or a total saving of $81,025 before those bonds become payable.

The policy of issuing bonds at the lowest possible rate should be continued in order that succeeding City Governments may have the benefit of low interest charges. The City still has unexpired 5 and 6 per cent bonds, all of which will not be due until 1905, and at these rates each City Council must make appropriations for interest from the tax levy. If it had been possible to have issued all of our City and Water Bonds at 3 1-2 per cent instead of at 4, 5 and 6 per cent as most of them stand today, the saving in interest this year would be $43,188.

BRIDGES.

Harvard Bridge has been replanked and the iron work painted. Craigie Bridge has received extensive repairs and our efficient Commissioner in his report calls your attention to sidewalks and fences needed on the Boston side. The draw of Prison Point Bridge is in bad shape, but no money should be expended in view of the overhead structure soon to be built.

Last year I called the attention of the City Council to the condition of West Boston Bridge, and suggested that plans and estimates be prepared. Since that time, the Boston Elevated Railway Company has secured amendments to its original charter as granted by the Legislature, and has leased the West End Street Railway Company,

intending to operate the same in conjunction with its own elevated structure yet to be built.

Early last year I asked a Committee of citizens to aid me in securing Rapid Transit for Cambridge and it was the desire of this Committee and myself that the Elevated Railway Company should be compelled to extend its road to Cambridge within two years after a suitable bridge had been built to replace the present West Boston Bridge, under forfeiture of its charter in case of failure to comply. We were aided in our efforts by the Cambridge members of the Legislature, but were unable to secure the forfeiture clause. We did secure the insertion of Section 15 in the bill which reads as follows : —

"Section 15. Said corporation shall join with the city of Boston and the city of Cambridge in a petition to the Legislature for the year eighteen hundred and ninety-eight or the year eighteen hundred and ninety-nine, as said cities may elect, for an act authorizing the construction and maintenance of a bridge across the Charles River, at or near the present site of West Boston Bridge, suitable for the use of the elevated and surface cars of said corporation, and also for all purposes of ordinary travel between said cities ; and said corporation shall pay towards the construction of said bridge such portion thereof as shall be rendered necessary by reason of its being of additional size and strength for the use of the elevated railroad of said corporation, and shall also itself construct or shall pay for constructing its railway, both elevated and surface, across said bridge, and the balance of such cost beyond that paid by said corporation shall be paid one-half by the city of Boston and one-half by the city of Cambridge. Said corporation shall also, within the period of six months from the time such bridge is finished, apply for a route beginning at

any of its lines of elevated track in Boston to said new bridge, across the same, to Brattle Square in Cambridge, over the locations hereinbefore granted. If said route is not approved by the Mayor and Aldermen of Boston and Cambridge, within sixty days of the application therefor, the said corporation shall, within thirty days from the expiration of said sixty days, apply to the board of railroad commissioners for such approval, who shall have authority to approve the same. Said corporation shall construct its railroad over said route within two years after it is authorized to begin the construction thereof. The city of Cambridge may petition the supreme judicial court sitting in equity, to enforce compliance with the provisions of this section, and if it be found, on the petition of said city, that said corporation has failed to comply with said provisions, the said supreme judicial court may pass such order or decree as it may deem proper on the premises."

On November 30th, the City Council requested me to petition the Legislature for an act to authorize the cities of Boston and Cambridge to build the bridge, and I trust that the Legislative Committee of the City Council will make strong efforts to secure an act in conformity with the petition.

To my knowledge, no aid has been granted Cambridge by the state or county in bridge or road building, during the past twenty years. Other cities and towns have secured State Roads and at no greater distance than Watertown do we see the county contributing financial assistance for the construction of the road extending to our city. Passengers in the cars running over West Boston Bridge are now carried direct to Watertown, Belmont, Newton, and Arlington, and by

transfer to Waltham, Winchester, Stoneham, Woburn and many other towns in Middlesex County. This bridge will be also used for driving by the people of Middlesex county outside of our own city to a great extent and I again recommend that efforts be made to have the County bear its proportionate share of the expense of rebuilding.

It is no more than right that Cambridge, which last year contributed $73,887.84 to the county tax, should receive financial aid from the county in the building of this bridge.

The rebuilding should now be pushed to its utmost that we may at the earliest possible moment enjoy the long looked-for rapid transit to Boston.

SCHOOLS

The Superintendent of Schools furnishes me with the following annual school statistics for 1897.

Number of pupils on the first of December	13,310
Increase over last year	422
Number of teachers on the first of December	354
Increase over last year	17
Cost of instruction in the day schools (salaries of teachers, superintendent, agent, clerks and truant officers)	$255,397 92
Increase in the cost of instruction	10,293 91
Cost of instruction per pupil	20 73
Increase in the cost of instruction per pupil	23

A committee of the School Board met a special committee of the City Council in December and after a careful consideration of buildings needed to accommodate the large increase of pupils to which I called attention a year

ago, an order was introduced into the City Council recommending the appropriation of $150,000, — for an addition to the Peabody School as originally planned; the erection of a twelve room building with hall, on land bought for this purpose on Norris Street; and the erection of a similar building near Windsor Street in Ward 2.

The City Council adopted the report of the committee, unanimously passed the appropriation and authorized the Treasurer to provide for the same by a loan.

While I still believe, as stated in my last inaugural, that one school building per annum is needed to take care of the increase in pupils, and that therefore the cost of such a building is an annual and current expense and should be met by appropriation from tax levy, yet I find that our demands in other directions are so pressing it cannot be done within the legal limit of $12 per thousand, which we are allowed by statute law to assess.

It is believed that the erection of the buildings already provided for will take care of the increase of pupils for three years to come.

STREET DEPARTMENT.

A perusal of the voluminous and detailed report of the Superintendent of Streets will give you a full account of the large amount of work done in his department.

The large appropriations for sidewalks and edgestones enabled the department to clean up the accumulated orders of previous years and to complete all but a few of the petitions presented in 1897.

Massachusetts Avenue from Arlington line to Chester Street, a distance of 4159 feet, has been given a Telford-Macadam road-bed which should wear for years with proper care. The material taken from the Avenue in excavating for the new road-bed has been used to excellent advantage and with little cost for surfacing fourteen of the side streets in the immediate vicinity.

I recommend that this work on Massachusetts Avenue be continued towards Harvard Square and that an appropriation of such amount as you deem prudent be made for this purpose.

The Superintendent recommends that several important streets, through which run electric cars, be paved, as the travel is heavy and there is great difficulty in keeping them in repair. They are Prospect, Pearl, Brookline and Cambridge Streets. As these are all residential streets, we shall be met with the same objection as on Massachusetts Avenue, where the abutters unanimously objected to granite paving as being too noisy. Brick paving is said to work well in Springfield, Massachusetts, and on account of its smoothness as compared with granite blocks, would not be so objectionable to abutters as a street paved with granite.

I recommend that a thorough investigation be made of the results achieved at Springfield, and if found desirable that brick be used in place of granite.

FIRE DEPARTMENT.

This department is in good condition and has performed its work during the past year with its usual efficiency.

Chemical Engine No. 1 has been thoroughly rebuilt, and is now in as good condition as when presented to the city by Harvard University. On my recommendation, the Chief Engineer will this year include in his estimates for his annual appropriation an amount sufficient to provide for heating, lighting, and repairing the engine and hook and ladder houses. These items heretofore have not been included, except in part, and it seemed to me that the true cost of maintaining the department could only be shown by including these items in the appropriation for Fire Department rather than in carrying them in the appropriation for Public Building, Care and Repairs.

The losses by fire for the year 1897 were phenonemally small, amounting to only $86,552.37, against an average of $200,699 for the previous seven years.

CEMETERY.

The report of the Commissioners states that there has been a large increase in the sale of lots, which is shown by the amount of excess revenue received by the City Treasurer from this department.

A new fire-proof vault for the custody of the records of the Cemetery has been built in the grounds adjoining the office.

The Commissioners ask for $2,000 to complete the work of laying out the unused Greenwood Avenue section.

They also ask you to favorably consider their request for the survey of the Old Burial Ground in Ward One,

so that the boundary lines may be defined. I strongly recommend that this be done and that a plan be made showing location of graves, vaults, monuments and head stones, together with all inscriptions. Many historic spots have been marked the past year, and following in this line, I desire to see all these old inscriptions copied and put on record before they become illegible.

I brought this matter to the attention of the Finance Committee nearly ten years ago, but nothing was done at that time on account of lack of appropriation.

POLICE.

On my recommendation, the City Council of last year adopted the provisions of Chapter 314 of the Acts of 1896 establishing a reserve police force for Cambridge, and under its provisions the force was increased in December by the addition of five reserve officers. These officers will perform all duties prescribed for the members of the regular police, and in case of vacancy occurring in the latter, promotion will be made under Civil Service rules from the members of the reserve force.

Also on my recommendation, the office of Deputy Chief was created by the Board of Aldermen of 1897. When not performing the duties of the chief during his absence from the city, the deputy has looked after the force at night, and I believe that good results have been obtained. The constant presence of a superior officer on night duty must necessarily result in better work by the sergeants

and patrolmen, than if left without supervision and on their own resources.

The Chief of Police had strict orders to thoroughly enforce the law against illegal liquor-selling during the past year. The arrests, convictions and sentences of the violators of the law must convince the citizens that he has performed his whole duty in this respect. It will be my duty and my aim to see that the no-license law is as thoroughly, impartially and honestly enforced during the coming year as it has been heretofore.

After an analysis of the various malt extracts sold by the grocers of Cambridge, which showed that the percentage of alcohol contained in those extracts ran from two and one-half to seven and one-half per cent, while lager beer contained but from three to five per cent, the Chief of Police notified those who were selling the extracts that the sale must be stopped, except by those holding a druggist's license. I have no doubt that these extracts were sold and used only for legitimate medicinal purposes, yet the chief had no option other than to stop the sale of all liquids containing so large a percentage of alcohol, his attention having been called to the matter by a circular sent to every Chief of Police of the Commonwealth by a well known temperance advocate of a near-by city.

The force now consists of a Chief, Deputy Chief, three Captains, a Chief Inspector ranking as Captain, seven Sergeants, eighty-four Patrolmen, five Reserve Officers, four Patrol Wagon Drivers, two Drivers of Ambulances and two Matrons.

As in the case of the Fire Department, the appropriations for Police Department will hereafter include all charges for heating, lighting and repairing station houses, in order that the exact cost of maintaining the department may be known.

INSPECTION OF BUILDINGS.

During the past year the Superintendent of this department prepared a new building ordinance which on recommendation of the Committee on Ordinances was adopted by the city Council and should aid the City in maintaining a high standard in the buildings hereafter to be erected.

His report shows that the value of the buildings erected exceeds that of the previous year and also shows that the greatest gain has been made in Wards 1 and 5.

WIRES AND LAMPS

The Superintendent of these departments renews several recommendations made in his annual report of last year.

During the past year a contract was made with the Welsbach Street Lighting Company of America to take out the old-fashioned gas lamp and replace it with a modern Welsbach lamp and burner of 60-candle power. The Company supplies the new lamps and pays for the gas. This has been accomplished at a price below that of the old system, the cost per light being $29.88 per annum, and the light itself is far in advance of anything

shown in our city with the exception of the arc electric light. Up to the present time the change has given the greatest satisfaction.

The wires of the Police Signal, Fire Alarm and Telephone are reported to be in as good order as is possible under their present systems.

SEWERS.

The report of the City Engineer will show you the present condition of our sewers and the need of some method of getting rid of our surface water which has now become a menace to the householders in certain localities.

The Sidney Street district, so called, is yet unprovided for and I would call your attention to the urgent demands for relief of those living in this vicinity.

PARKS.

During the past year our city lost the valuable services of the President of the Park Commission, Mr. Henry D. Yerxa, who resigned his office on account of the pressure of business and private affairs. He had been a member of the Board from its inception and his ability and great interest in the work deserved the well merited testimonial accorded him by his fellow-citizens on his retirement.

No one more thoroughly familiar with the work and more competent to take it up where left by Mr. Yerxa could have been found than his successor, President George Howland Cox, the former Secretary of the Board.

To complete the taking of the river banks, the Commissioners first secured a proposition from the owners of the flats lying between West Boston Bridge and the Charles River Embankment Company's land in which said owners agreed that they would fill this territory to grade before January 1st, 1899, and would donate a strip 200 feet wide for an Esplanade, provided that the city would build a sea-wall before January 1st, 1898; the Commissioners then asked the City Council to accept the offer and grant an appropriation for the work, which was done. It should be clear to every thinking citizen that having gone so far in acquiring the banks of the Charles River, it would have been folly to allow the opportunity to escape for securing this territory, it being the only remaining break of any moment between Craigie's Bridge and the Cambridge Hospital Grounds, especially in view of the fact that we at once secure the filling of unsightly flats, lying adjacent to an approach to our city over which pass the largest proportion of those entering our gates. And these flats, which are now practically valueless, will within a few years yield in taxes a revenue far in excess of the interest on the amount expended at this time. Under our contracts this work must be completed this year. Binney Field and the banks of the river from Boylston Street west are finished. We have already expended nearly $820,000 in four years on our park system and many of our citizens believe that from now on our progress should be less rapid and I would ask you to give serious consideration to the work laid out by the Park

Commission for this year, and to the matter of appropriations for carrying it forward.

WATER WORKS.

Hobb's Brook Basin, Payson Park Reservoir and the new and magnificent twenty-million-gallon pump are completed, and no large expenditures are now in sight, with the exception of an additional supply pipe from Stony Brook to Fresh Pond Reservoir, and this may not be needed for two or three years.

After the payment of unsettled land takings and some unpaid monthly and reserve bills, the total cost of the Water Works to date will be in round figures $5,500,000.

The amount to be paid to Sinking Fund and for Interest on Water Bonds the coming year will be about $225,000.

To take care of these two accounts, the maintenance and abatement accounts, we have the amount to be received from water rates. This amount last year was $299,845.32, and this year it should be at least $310.000.

So many bonds have been issued for the large undertakings of the past few years, and so little is left as surplus from the water rates, that I believe our citizens will be content to wait for the contemplated Park improvements about Fresh Pond until the growing receipts give us more leeway than we shall have this year. As only $12,500 worth of the Water Bonds mature this year, and none again until 1906, no diminution of Interest or Sinking Fund charges can take place until that time.

The reports from the departments that I have omitted to mention and the detailed estimates of appropriations soon to be asked for by them will give you a better idea of their work and needs than I could do, without taxing your patience.

Our ordinances are in great need of revision. An appropriation was made for this purpose last year, but those who were to revise them did not find time to begin the work. I trust that immediate attention will be given to this matter, so that early in the year the revised ordinances may be in the printer's hands.

The demand for a Harvard Square shelter we still have with us, and I would suggest that the special committee on Accommodation to Street Railway Company Patrons at Harvard Square be again appointed, that it may take in charge the proposed measures for relief at that point.

Gentlemen of the City Council: —

If we had been asked to act as directors of a vast corporation of the size of our city, and to take charge of the collection and disbursement of nearly $4,000,000, we would certainly pause and give the proposition deep thought and long consideration before venturing to assume so serious a responsibility.

To-day we are assuming just such a responsibility and I trust that we approach the task with a due appreciation of its magnitude.

The management of the affairs of a corporation concerns only the comparatively few persons who own stock in it, but the management of the affairs of the City of Cambridge concerns to a greater or less degree every man, woman and child within its borders.

Let us therefore enter upon our work with a determination to give our best thought, our unbiased judgment and our uninfluenced vote to every matter which comes before us for action, and on the completion of our term of office, we can retire with a clear conscience, knowing that we have done our best and that no man can do aught more.

I desire to thank my fellow-citizens for the confidence they have expressed in those who were associated with me last year, and I personally appreciate the high honor they have conferred upon me by again electing me to the responsible office of Mayor of the City.

I wish to thank the members of the various boards and commissions, heads of departments and other officials for the kind assistance given me whenever called for during the year just past, and I trust that the same pleasant relations will exist in the year to come.

ANNUAL REPORTS

ANNUAL REPORT OF THE CITY AUDITOR

City Auditor's Office,
Cambridge, December 1, 1897.

To the Honorable the City Council:—

The undersigned herewith presents the annual statement of the receipts and expenditures of the City of Cambridge for the fiscal year beginning on the first day of December, 1896, and ending on the thirtieth day of November, 1897, together with a schedule of the city property.

Respectfully submitted,

HARRY T. UPHAM,
City Auditor.

REPORT OF THE CITY AUDITOR

Balance in the Treasury, November 30, 1896			$319,395 07
The receipts from all sources from December 1, 1896, to November 30, 1897, were as follows:—			
From City Departments		$179,000 27	
Water Works		326,119 99	
Taxes:—			
City	$1,529,254 70		
Corporations	80,158 88		
National Banks	16,086 87		
		$1,625,500 45	
Sale of Bonds:—			
For Clay Lands	$20,000 00		
Extension and Widening of Streets	11,000 00		
Extension of Water Works	375,000 00		
Parks	150,000 00		
Paving	20,000 00		
School Houses	109,500 00		
Premiums	13,351 75		
		$698,851 75	
Betterments, City		268 50	
Betterments, Parks		10,889 41	
Perpetual Care of Lots in Cambridge Cemetery		3,797 25	
Temporary Loans in anticipation of taxes		600,000 00	
Trustees of Sinking Fund of Water Works for payment of Water Bonds		16,000 00	
Total receipts			$3,460,427 62
Amount carried forward			$3,779,822 69

Amount brought forward			$3,779,822 69
The payments have been as follows:—			
For City Departments		$1,985,060 44	
Water Works		794,179 98	
Cemetery Fund (invested)		3,797 25	
Loan, Temporary (City Notes) . . .		600,000 00	
Taxes:—			
Abatements	$22,081 73		
County	73,887 84		
Liens	3,104 48		
Metropolitan Sewer, 1896	69,033 87		
Metropolitan Sewer, 1897	68,263 43		
National Bank	7,995 91		
State	54,600 00		
		$298,967 26	
Water Debt, due July 1, 1897		16,000 00	
Total expenditures			$3,698,004 93
Balance in the Treasury			$81,817 76
The balance in the Treasury is subject to draft for amounts contracted for but not ready for payment, as follows:			
Clay Lands		$1,244 59	
Land Damages		14,420 75	
Parks		22,761 99	
Premiums		13,133 13	
Water		28,535 67	
			80,096 13
Leaving a net balance in the Treasury of			$1,721 63

CITY FUNDED DEBT.

There has been an addition to the City Funded Debt during the year as follows : —

Clay Land Loan, registered bonds payable in fifteen years, at an annual interest of three and one-half per cent.	
For the purpose of defraying the expense incident to the restricting of the land of the Bay State Brick Company, as per agreement of said Company with the City of Cambridge, dated April 16, 1896, in the laying out, accepting and establishing of certain streets, and the building, construction and establishment of main drains or common sewers, within the tract of land so to be restricted and in accordance with the authority conferred by Chapter 175 of the Legislative Acts of the year 1896	$20,000 00
Park Loans, registered bonds payable in forty years, at an annual interest of three and one-half per cent.	
For the purpose of paying for land taken for our system of public parks and for the construction, adornment, renewal and enlargement of said parks under authority conferred by Chapter 89 of the Legislative Acts of the year 1894	100,000 00
Also for the purpose of the extension of the Esplanade in accordance with the provisions of Chapter 469 of the Legislative Acts of the year 1897 . . .	50,000 00
Paving Loan, registered bonds payable in ten years, at an annual interest of three and one-half per cent.	
For the purpose of the construction of sidewalks with edgestones	20,000 00
School House Loans, registered bonds payable in twenty years, with interest at three and one-half per cent. per annum.	
For the purpose of defraying the cost of construction of the new Latin School House on Trowbridge Street	100,000 00
Amount carried forward	$290,000 00

Amount brought forward		$290,000 00
Also registered bonds, payable in ten years, for the purpose of defraying the cost of land purchased for school houses, viz: Site for a new school house in Ward 5, $6,000.00, and enlargement of the Taylor School House, $3,500.00		9,500 00
Street Loan, registered bonds payable in ten years, at an annual interest of three and one-half per cent.		
For the purpose of defraying the cost of widening, extension and laying out of certain streets, viz:		
Eighth Street	$6,000 00	
Magee Street	5,000 00	
		11,000 00
Total		$310,500 00

	1896.	1897.	Increase.
Funded City Debt.....	$3,313,000 00	$3,623,500 00	$310,500 00
Sinking Funds.....	581,668 24	714,973 91	133,305 67
Net Funded City Debt.....	$2,731,331 76	$2,908,526 09	$177,194 33

The following is a statement of the total funded debt of the city, with the rates of interest thereon : —

Bridge Loan.

Date of Issue.	Rate of Interest.	When due.	Amount.	Total.
Oct. 1, 1887.....	4 per cent.—30 yrs....	Oct. 1, 1917....	$10,000 00	
July 1, 1888.....	4 " —30 "	July 1, 1918....	100,000 00	
Sept. 1, 1888.....	4 " —30 "	Sept. 1, 1918....	100,000 00	
Mar. 1, 1889.....	4 " —30 "	Mar. 1, 1919....	115,000 00	
Nov. 1, 1890.....	4 " —30 "	Nov. 1, 1920....	5,000 00	
July 1, 1891.....	4 " —30 "	July 1, 1921....	60,000 00	
July 1, 1891.....	4 " —10 "	July 1, 1901....	15,000 00	
Aug. 1, 1893.....	4 " —30 "	Aug. 1, 1923....	10,000 00	$415,000 00

Amount carried forward $415,000 00

Amount brought forward $415,000 00

Building Loan.

Date of Issue.	Rate of Interest.	When due.	Amount.	Total.
May 2, 1892.....	4 per cent.—10 yrs....	May 2, 1902.. .	$20,000 00	
Nov. 1, 1893.....	4 " —10 "	Nov. 1, 1903....	40,000 00	
Aug. 1, 1894.....	4 " —20 "	Aug. 1, 1914....	118,000 00	
Oct. 1, 1895.....	4 " —20 "	Oct. 1, 1915....	60,000 00	
Oct. 1, 1896.....	4 " —20 "	Oct. 1, 1916....	103,000 00	$341,000 00

Cambridge Cemetery Loan.

Aug. 1, 1895.....	4 per cent.—20 yrs....	Aug. 1, 1905....		$65,000 00

City Loan.

Aug. 1, 1894.....	4 per cent.—10 yrs....	Aug. 1, 1904....		$52,000 00

Clay Land Loan.

July 1, 1896.....	4 per cent.—15 yrs....	July 1, 1911....	$50,000 00	
Nov. 1, 1897.....	3½ " —15 "	Nov. 1, 1912....	20,000 00	$70,000 00

Land Loan.

Aug. 1, 1888.....	4 per cent.—10 yrs....	Aug. 1, 1898....		$83,000 00

Park Loan.

Feb. 1, 1894.....	4 per cent.—30 yrs....	Feb. 1, 1924.. .	$360,000 00	
Aug. 1, 1895.....	4 " —40 "	Aug. 1, 1935....	100,000 00	
Feb. 1, 1896.....	4 " —40 "	Feb. 1, 1936....	100,000 00	
Aug. 1, 1896.....	4 " —30 "	Aug. 1, 1926....	100,000 00	
Oct. 1, 1896.....	4 " —30 "	Oct. 1, 1926....	40,000 00	
Sept. 1, 1897.....	3½ " —40 "	Sept. 1, 1937....	100,000 00	
Nov. 1, 1897.....	3½ " —40 "	Nov. 1, 1937....	50,000 00	$850,000 00

Amount carried forward $1,876,000 00

Amount brought forward $1,876,000 00

Paving Loan.

Date of Issue.	Rate of Interest.	When due.	Amount.	Total.
Nov. 1, 1892.....	4 per cent.—10 yrs....	Nov. 1, 1902....	$50,000 00	
Oct. 1, 1897.....	3½ " —10 "	Oct. 1, 1907....	20,000 00	$70,000 00

School-House Loan.

May 1, 1890.....	4 per cent.—10 yrs....	May 1, 1900....	$100,000 00	
Jan. 1, 1891.....	4 " —10 "	Jan. 1, 1901....	100,000 00	
July 1, 1891.....	4 " —10 "	July 1, 1901....	60,000 00	
Nov. 1, 1892.....	4 " —10 "	Nov. 1, 1902....	20,000 00	
Oct. 1, 1896.....	4 " —20 "	Oct. 1, 1916....	6,000 00	
July 1, 1897.....	3½ " —20 "	July 1, 1917....	100,000 00	
Nov. 1, 1897.....	3½ " —10 "	Nov. 1, 1907....	9,500 00	$395,500 00

Sewer Loan.

July 1, 1873.....	6 per cent.—30 yrs....	July 1, 1903....	$136,000 00	
July 1, 1874.....	6 " —30 "	July 1, 1904....	295,000 00	
July 1, 1875.....	6 " —30 "	July 1, 1905....	144,000 00	
Nov. 1, 1887.....	4 " —20 "	Nov. 1, 1907....	30,000 00	
Nov. 1, 1889.....	4 " —20 "	Nov. 1, 1909....	22,000 00	
May 1, 1890.....	4 " —20 "	May 1, 1910....	15,000 00	
July 1, 1891.....	4 " —20 "	July 1, 1911....	15,000 00	
Aug. 1, 1894.....	4 " —30 "	Aug. 1, 1924....	75,000 00	
Oct. 1, 1895.....	4 " —30 "	Oct. 1, 1925....	60,000 00	
Oct. 1, 1896.....	4 " —20 "	Oct. 1, 1916....	75,000 00	$867,000 00

Street Loan.

May 2, 1892.....	4 per cent.—10 yrs....	May 2, 1902....	$55,000 00	
Aug. 1, 1894.....	4 " —20 "	Aug. 1, 1914....	30,000 00	
Oct. 1, 1895.....	4 " —20 "	Oct. 1, 1915....	60,000 00	
Oct. 1, 1896.....	4 " —20 "	Oct. 1, 1916....	137,000 00	
Nov. 1, 1897.....	3½ " —10 "	Nov. 1, 1907....	11,000 00	$293,000 00

Amount carried forward $3,501,500 00

Amount brought forward $3,501,500 00

Street Widening Loan.

Date of Issue.	Rate of Interest.	When due.	Amount.	Total.
Nov. 1, 1889.....	4 per cent.—10 yrs....	Nov. 1, 1899....	$8,000 00	
July 1, 1873.....	6 " —30 "	July 1, 1903....	10,000 00	
July 1, 1874.....	6 " —30 "	July 1, 1904....	90,000 00	
July 1, 1875.....	6 " —30 "	July 1, 1905....	14,000 00	$122,000 00

TOTAL FUNDED CITY DEBT $3,623,500 00

THE FUNDED WATER DEBT.

There has been a decrease in the Funded Water Debt during the year by the payment of the following matured loans: —

Water Loan, issued July 1, 1877, and payable July 1, 1897, with interest at 6 per cent. $16,000 00

There has been an addition to the Water Debt during the year by the issue of registered 3 1-2 per cent. bonds as follows: —

April 1, 1897, due April 1, 1917	$200,000 00
July 1, 1897, due July 1, 1917	100,000 00
Nov. 1, 1897, due Nov. 1, 1917	75,000 00
	$375,000 00

	1896.	1897.	Increase.	Decrease.
Funded Water Debt.....	$2,602,600 00	$2,961,600 00	$359,000 00	
Sinking Fund of Water Works...	369,347 02	464,138 28	94,791 26	
Net Funded Water Debt.....	$2,233,252 98	$2,497,461 72	$264,208 74	

Following is a statement of the total funded water debt of the city, with rates of interest thereon : —

Date of Issue.	Rate of Interest.	When Due.	Amount.	Total.
July 1, 1878.....	5 per cent.—20 yrs....	July 1, 1898....	$12,500 00	
Nov. 1, 1886.....	3½ " —20 "	Nov. 1, 1906....	43,000 00	
Oct. 1, 1887.....	4 " —20 "	Oct. 1, 1907....	90,000 00	
Nov. 1, 1887.....	4 " —20 "	Nov. 1, 1907.. .	22,000 00	
July 1, 1888.....	4 " —20 "	July 1, 1908....	46,000 00	
Aug. 1, 1888.....	4 " —20 "	Aug. 1, 1908....	25,000 00	
July 1, 1889.....	4 " —20 "	July 1, 1909....	20,000 00	
May 1, 1885.....	4 " —25 "	May 1, 1910....	288,000 00	
July 1, 1890.....	4 " —20 "	July 1, 1910....	75,000 00	
Sept. 1, 1890.....	4 " —20 "	Sept. 1, 1910....	125,000 00	
Jan. 1, 1891.....	4 " —20 "	Jan. 1, 1911....	20,000 00	
Oct. 1, 1891.....	4 " —20 "	Oct. 1, 1911....	35,000 00	
Jan. 1, 1892.....	4 " —20 "	Jan. 1, 1912....	150,000 00	
May 2, 1892.....	4 " —20 "	May 2, 1912....	75,000 00	
Nov. 1, 1892.....	4 " —20 "	Nov. 1, 1912....	45,000 00	
Feb. 1, 1893.....	4 " —20 "	Feb. 1, 1913....	100,000 00	
Aug. 1, 1893.....	" —20 "	Aug. 1, 1913....	50,000 00	
Apr. 1, 1895.....	4 " —20 "	Apr. 1, 1915. ..	200,000 00	
Aug. 1, 1895.....	4 " —20 "	Aug. 1, 1915....	200,000 00	
Apr. 1, 1894.....	4 " —30 "	Apr. 1, 1924....	300,000 00	
Apr. 1, 1896.....	4 " —20 "	Apr. 1, 1916....	100,000 00	
July 1, 1896.....	4 " —20 "	July 1, 1916....	200,000 00	
Aug. 1, 1896.....	4 " —20 "	Aug. 1, 1916....	100,000 00	
Oct. 1, 1896.....	4 " —20 "	Oct. 1, 1916....	265,100 00	
Apr. 1, 1897.....	3½ " —20 "	Apr. 1, 1917....	200,000 00	
July 1, 1897.....	3½ " —20 "	July 1, 1917....	100,000 00	
Nov. 1, 1897.....	3½ " —20 "	Nov. 1, 1917....	75,000 00	$2,961,600 00

Recapitulation.

Amount of funded City Loan upon which interest is at 6 per cent.	$689,000 00	
Amount of funded City Loan upon which interest is at 4 per cent.	2,624,000 00	
Amount of funded City Loan upon which interest is at 3 1-2 per cent.	310,500 00	
		$3,623,500 00
Amount of Water Loan upon which interest is at 5 per cent.	$12,500 00	
Amount of Water Loan upon which interest is at 4 per cent.	2,531,100 00	
Amount of Water Loan upon which interest is at 3 1-2 per cent.	418,000 00	
		$2,961,600 00

Temporary loans for the past ten years, and interest paid upon the same : —

Year.	Temporary Loan.	Interest paid upon Loan.	Year.	Temporary Loan.	Interest paid upon Loan.
1887.....	$555,000	$9,222 24	1893.....	$541,850	$11,560 32
1888.....	400,000	9,497 36	1894.....	125,000	3,106 15
1889.....	490,000	5,919 54	1895.....	550,000	6,194 64
1890.....	425,000	7,570 57	1896.....	786,000	12,344 07
1891.....	465,000	10,796 25	1897.....	600,000	6,186 40
1892.....	516,000	8,015 51			

The Trust Funds

Assumed by the city are held by trustees, and interest is paid upon them at the rate of six per cent. annually, as follows: —

Name of Fund.	Amount.	Interest.
Daniel White Charity Fund.....	$5,000	At 6 per cent..... $300
Dowse Institute Fund.....	10,000	At 6 per cent..... 600
Sanders Temperance Fund.....	10,000	At 6 per cent..... 600
	$25,000	$1,500

Cemetery Fund.

Amount of Fund, Nov. 30, 1896		$36,347 48
RECEIVED.		
For perpetual care of lots in Cambridge Cemetery	$3,797 25	
Interest on investments	1,421 12	
	$5,218 37	
EXPENDED.		
For care of lots in Cambridge Cemetery	1,381 27	
		3,837 10
Amount of Fund, Nov. 30, 1897		$40,184 58

The Fund is held in trust and is invested as follows:—

City of Cambridge Bonds	$35,500 00	
Cambridgeport Savings Bank	4,684 58	
		$40,184 58

Commissioners of Sinking Fund.

Amount of Funds, Nov. 30, 1896		$581,668 24
RECEIVED.		
From City Treasurer, being amount appropriated by the City Council to be derived from taxation	$116,860 00	
Interest accumulations	16,445 67	
		133,305 67
Amount of Fund, Nov. 30, 1897		$714,973 91

Trustees of Sinking Fund of Water Works.

Amount of Fund, Nov. 30, 1896	$369,347 02
RECEIVED.	
From City Treasurer, for amount due and appropriated by the City Council from the Revenue of the Water Works	91,091 00
Interest accumulations	15,232 99
Unexpended revenue of Water Works	4,467 27
EXPENDED.	
For matured Water Bonds	16,000 00
Amount of Fund, Nov. 30, 1897	$464,138 28

Abatement — Taxes.

No appropriation is made for abatements, as the Assessors are expected to allow in the overlay an amount sufficient to cover the same.

The overlay for 1897 was	$26,231 07
The total amount of tax abatements allowed was	22,081 73
Balance available for city purposes	$4,149 34

The abatements allowed by the City Collector on certificates of the Assessors were as follows: —

	Real.	Personal.	Polls.	Total.
Tax of 1891		$27 90		$27 90
" 1892		35 20		35 20
" 1895	$6 28	350 89	$14 00	371 17
" 1896	3,189 75	1,161 61	50 00	4,401 36
" 1897	6,904 82	10,128 19	174 00	17,207 01
Street Watering				39 09
	$10,100 85	$11,703 79	$238 00	$22,081 73

TAXES.

The amount of taxes assessed by the Board of Assessors on the real and personal estates and polls of Cambridge, for the year 1897, was as follows: —

Valuation of real estate	$70,339,200 00
Valuation of personal estate	16,302,545 00
	$86,641,745 00
Assessed at $17.50 per $1,000 gives	$1,516,230 54
24,407 polls at $2	48,814 00
Bank stock (non-residents separately assessed)	7,443 71
	$1,572,488 25

This tax is divided as follows: —

For city purposes *	$1,273,028 32
County assessments	73,887 84
Overlay	26,231 08
State assessments	191,897 30
State charge for non-resident bank stock	7,443 71
	$1,572,488 25

Increase in number of polls since last year: —

560 polls at $2.00	$1,120 00
Increase in real estate valuation	2,504,100 00
Increase in personal valuation	387,550 00
Gain in valuation since last year	$2,892,770 00
Number of houses in 1897	13,217
Number of houses in 1896	12,723
Number of houses built during the past year	494
Number of horses assessed	4,998
Number of cows assessed	262
Number of swine assessed	72

* To meet the city expenses the income from various departments is added to this sum raised by taxation.

Polls and Valuation of Polls and Estates, May 1, 1895.

Wards.	Polls.	Valuation of Polls.	Personal.	Real Estate.	Total, Real and Personal	Dwellings.	Total Tax.
One.....	3,846	$7,692 00	$6,326,020	$17,214,500	$23,540,520	2,417	$377,278 16
Two....	6,701	13,402 00	3,973,565	14,736,600	18,710,165	3,209	307,151 59
Three ..	3,762	7,524 00	1,910,375	9,145,800	11,056,175	1,629	181,105 94
Four....	5,557	11,114 00	2,490,900	13,571,400	16,062,300	3,083	263,292 11
Five	2,915	5,830 00	1,906,500	9,635,400	11,541,900	1,967	187,037 83
Total.	22,781	$45,562 00	$16,607,360	$64,303,700	$80,911,060	12,305	$1,315,865 64

Polls and Valuation of Polls and Estates, May 1, 1896.

Wards.	Polls.	Valuation of Polls.	Personal.	Real Estate.	Total Real and Personal	Dwellings.	Total Tax.
One....	3,964	$7,928 00	$5,973,100	$18,095,700	$24,068,800	2,483	$371,366 88
Two....	7,170	14,340 00	3,642,760	15,335,400	18,978,160	3,340	300,910 21
Three ..	3,693	7,386 00	1,919,935	9,311,100	11,231,035	1,636	176,974 63
Four....	5,880	11,760 00	2,494,800	14,823,200	17,318,000	3,158	273,261 80
Five....	3,140	6,280 00	1,884,400	10,269,700	12,154,100	2,106	189,806 91
Total.	23,847	$47,694 00	$15,914,995	$67,835,100	$83,750,085	12,723	$1,312,320 43

Polls and Valuation of Polls and Estates, May 1, 1897.

Wards.	Polls.	Valuation of Polls.	Personal.	Real Estate.	Total Real and Personal	Dwellings.	Total Tax.
One.....	4,119	$8,238 00	$6,640,380	$19,498,700	$26,139,080	2,599	$465,671 90
Two	7,244	14,488 00	3,394,345	15,849,000	19,243,345	3,477	351,246 53
Three...	3,742	7,484 00	1,953,520	9,389,700	11,343,220	1,604	205,990 35
Four....	5,894	11,788 00	2,458,700	14,585,200	17,043,900	3,280	310,056 25
Five	3,408	6,816 00	1,855,600	11,016,600	12,872,200	2,257	232,079 50
Totals.	24,407	$48,814 00	$16,302,545	$70,339,200	$86,641,745	13,217	$1,565,044 53

Statement of the valuations of the personal property and real estate of the City of Cambridge, with the number of polls, dwellings, and rate of taxation for the past ten years: —

Year.	Polls.	Personal.	Real Estate.	Total.	Dwellings.	Rate per $1,000.
1888.....	18,086¾	$14,296,740	$48,420,600	$62,717,340	9,927	$15 00
1889.....	18,307½	14,960,100	50,324,175	65,284,275	10,222	16 00
1890.....	19,221¾	15,339,925	52,235,000	67,574,925	10,615	15 60
1891.....	20,731¼	16,508,770	54,167,914	70,676,684	10,932	15 50
1892.....	22,013¼	17,687,595	56,668,100	74,355,695	11,359	15 00
1893.....	22,752	17,511,089	58,782,900	76,293,989	11,768	16 40
1894.....	22,172	16,658,320	60,877,300	77,535,620	12,262	15 80
1895.....	22,781	16,607,360	64,303,700	80,911,060	12,305	15 70
1896.....	23,847	15,914,995	67,835,100	83,750,095	12,723	15 10
1897.....	24,407	16,302,545	70,339,200	86,641,745	13,217	17 50

Abatements and discounts upon taxes for the past ten years, and amount of tax uncollected December 1, 1897: —

Year.	Total Tax.	Total Abatement.	Total Discounts.	Amount of Tax uncollected Dec. 1, 1897.
1888.....	$982,829 50	$21,667 20	$25,366 53	
1889.....	1,088,374 60	20,982 71	28,081 09	
1890.....	1,099,741 38	20,966 82	28,012 44	
1891.....	1,143,712 67	21,343 12		$11,576 25
1892.....	1,240,186 50	21,636 54		13,947 20
1893.....	1,303,639 84	24,678 10		17,388 08
1894.....	1,278,899 72	26,926 07		16,150 32
1895.....	1,324,613 76	19,427 40		22,746 85
1896.....	1,321,932 65	17,922 54		33,350 53
1897.....	1,574,047 50	22,081 73		255,868 26

The valuations of estates in this city, for the years hereinbefore mentioned, are the same as originally made by the Board of Assessors, during those years, and the same figures were reported by that board to the Tax Commissioners for each of the years

respectively. These valuations were subject to changes in each year, after such report was made, as shown by the following: —

Net valuations of estates in the City of Cambridge, for the past three years, after adding the amounts of all supplementary warrants and deducting therefrom all abatements: —

Year.	Total Valuation.	Abatements.	Net Valuation.
1895	$81,126,960	$1,090,514	$80,036,446
1896	84,026,530	1,192,314	82,834,216
1897	86,710,045	973,315	85,736,730
	$251,863,535	$3,256,143	$248,607,392

Borrowing Capacity.

The average net valuation of the City of Cambridge for the years 1895, 1896 and 1897, is $82,869,130

This last sum represents the amount upon which the limit of the rate of taxation, and also of municipal indebtedness is fixed under the provisions of Chapter 312 of the Acts of the year 1885.

2 1-2 per cent. on the same is $2,071,728 25

The entire City Debt is $3,623,500 00

Of this amount the following loans are not within the legal debt limit, being exempted by the following Acts of the Legislature: —

Harvard Bridge Loan.

Acts of 1887, Chapter 282 Acts of 1888, Chapter 73 Acts of 1891, Chapter 311	$400,000 00	

Park Loan.

Acts of 1892, Chapter 341 Acts of 1893, Chapter 337 Acts of 1894, Chapter 89 Acts of 1897, Chapter 469	850,000 00	

Clay Land Loan.

Acts of 1896, Chapter 175	70,000 00	
	$1,320,000 00	
Amounts carried forward	$2,303,500 00	$2,071,728 25

Amounts brought forward		$2,303,500 00	$2,071,728 25
The entire Sinking Fund is .	$714,973 91		
Of this amount there should be deducted on account of Exempted Loans:—			
"Harvard Bridge"	$78,800 87		
"Park" . . .	28,965 70		
Clay Lands . . .	2,500 00		
	110,266 57		
Net Sinking Fund		604,707 34	
Net City Debt Dec. 1, 1897			$1,698,792 66
Borrowing capacity for City purposes, Dec. 1, 1897			$372,935 59
Borrowing capacity for "Clay Lands" .			50,000 00
Borrowing capacity for "Parks" . . .			150,000 00

"ACTS OF 1885, CHAPTER 312.

"AN ACT TO LIMIT MUNICIPAL DEBT OF AND THE RATE OF TAXATION IN CITIES.

"Be it enacted, etc., as follows:—

"SECTION 1. The taxes assessed on property in any city, except the city of Boston, exclusive of state tax, county tax and sums required by law to be raised on account of the city debt, shall not exceed in any year twelve dollars on every one thousand dollars of the average of the assessors' valuations of the taxable property therein for the preceding three years, the valuation being first reduced by the amount of all abatements allowed thereon, previous to the thirty-first day of December in the year preceding said assessment, and any order or appropriation requiring a larger assessment than is herein limited shall be void.

"SECTION 2. The limit of indebtedness of cities shall hereafter be two and one-half per cent. on the average valuation prescribed in Section one of this act."

TAX LEVY.

Average net valuation for 1895, 1896 and 1897 . . .	$82,869,130 00
Assessed at $12.00 per $1,000 gives	$994,429 56

Which is the legal limit of taxation for municipal purposes for 1898, outside of the Sinking Fund requirements, Interest on the Debt and State and County Tax, unless advantage is taken of the following Legislative Act of 1893:—

ACTS OF 1893, CHAPTER 247.

"AN ACT AUTHORIZING ASSESSORS IN CITIES OF LESS THAN ONE HUNDRED THOUSAND INHABITANTS TO USE THE VALUATION OF THE YEAR PRECEDING AS A BASIS OF TAXATION.

"Be it enacted, etc., as follows:—

"SECTION 1. In every city containing less than one hundred thousand inhabitants, the taxes assessed on property, exclusive of State Tax, County Tax and sums required by law to be raised on account of City Debt, shall not exceed in any year twelve dollars on every one thousand dollars of the assessors' valuation of the taxable property, therein for the preceding year, said valuation being first reduced by the amount of all abatements allowed thereon previous to the thirty-first day of December in the year preceding said assessment, and any order or appropriation requiring a larger assessment than is herein limited shall be void; but, the city council of any city coming within the provisions of this Act, may, in any year, decide that the taxes assessed shall be raised in accordance with the provisions of Section one of Chapter three hundred and twelve, of the Acts of the year eighteen hundred and eighty-five."

In which case the net valuation for 1897 being . . .	$85,736,730 00
Assessed at $12.00 per $1,000 gives	$1,028,840 76

Balance Sheet of the City of Cambridge, December 1, 1897, Showing Assets and Liabilities.

	Assets.	Liabilities.
Betterments	$4,766 90	
Cemetery Fund	40,184 58	
City Debt (Contingent)		$200,000 00
City of Cambridge (City Property)	5,015,732 43	
City Treasurer (Cash)	81,817 76	
Daniel White Charity (Trust Fund)		5,000 00
Dowse Institute Fund (Trust Fund)		10,000 08
Funded City Debt		3,623,500 00
Funded Water Debt		2,961,600 00
Park Betterments	97,374 87	
Sanders Temperance Fund (Trust Fund)		10,000 00
Sinking Funds	714,973 91	
Sinking Fund of Water Works	464,138 28	
Taxes due the City	371,027 49	
Tax Liens	20,574 85	
Tax Sale "Surplus"		491 07
	$6,810,591 07	$6,810,591 07

Estimated Revenue and Actual Revenue for the Year Ending November 30, 1897.

	Actual	Estimated
Bridge Department	$796 74	$700 00
Cemetery Department	19,644 05	18,500 00
City Clerk Department	2,552 25	2,500 00
Contingent Fund	966 41	
Engineering Department	2,000 00	2,000 00
Fire Department	214 73	100 00
Inspection of Milk and Vinegar	150 50	150 00
Inspection of Wires	200 41	
Interest	8,737 53	7,000 00
Law Department	2,100 00	2,100 00
Overseers of the Poor	29,492 79	27,000 00
Park Department	3,705 23	3,697 40
Plumbers' Examiners	72 00	30 00
Police Department	7,043 90	6,500 00
Public Library	4,272 94	4,500 00
Public Property	3,872 62	3,500 00
School Department	2,774 88	2,300 00
Sealer of Weights and Measures	551 08	500 00
Sewer Department	18,862 93	29,500 00
State Aid	14,160 50	14,000 00
Stationery and Printing	1,201 82	1,200 00
Street Department	53,219 11	46,000 00
Treasury Department	2,407 85	1,800 00
Water Works	326,119 99	305,000 00
Taxes:		
Corporation	80,158 88	70,000 00
National Bank (net)	8,090 96	9,000 00
Taxes 1897	1,318,179 24	1,374,047 50
Old Taxes	211,075 46	200,000 00
	$2,122,624 80	$2,131,624 90

After the annual appropriations had been made, the following additional appropriations were made to be provided for by a City Debt, viz : —

For Parks, "Charles River Esplanade"	$125,000 00
Extension and Widening Magee Street	5,000 00
Land for School Houses in Wards Three and Five	9,700 00
Laying Sidewalks with Edgestones	20,000 00
	$159,700 00

Of this amount bonds to the amount of $134,500.00 were issued.

After the annual appropriations had been made the following appropriations were made and provided for by transfers and surplus revenues, viz : —

Assessors' Department	$77 44
Election Expenses	683 92
Overseers of the Poor:—	
Almshouse Department	350 00
Farm and Ledge Department	550 00
Police Department	550 42
Public Property:—	
New School House in Ward One	56 97
School Houses, Care and Repairs	483 25
School Department	638 14
Sewer Department	2,300 00
Sealer of Weights and Measures	19 73
Sinking Funds	365 00
Street Department	16,971 84
Water Works	6,143 89
	$29,190 60

Transfers.

The following transfers were made from the appropriations mentioned, to make up deficiencies occurring in the appropriations to which transfers were made, viz :—

From the Appropriation for	Amounts.	To the Appropriation for	Amounts.
Contingent Fund.....	$2,304 76	Assessors' Department....	$77 44
		Election Expenses..... ...	683 92
		Police Department.....	550 42
		School Department.....	125 00
		School Houses:— Care and Repairs.....	483 25
		Sinking Funds.....	365 00
		Sealer of Weights and Measures.....	19 73
City Clerk "Town Records"	1,000 00	Street Dept., Maintenance.	1,000 00
Overseers of the Poor:—		Almshouse Department....	350 00
Outside Aid Dept.....	900 00	Farm and Ledge Dept.....	550 00
Public Property.....	56 97	New School House. Ward 1.	56 97
School Dept., Salaries.....	163 14	School Department:— Care of Truants.....	163 14
School Dept., T. B. & S.....	350 00	Incidentals	350 00
Sewer Dept., Clay Lands....	13,000 00	Street Dept., Clay Lands...	13,000 00
Sewer Dept., Tannery Brook	1,500 00	Sewer Dept., Construction.	1,500 00
Sewer Dept., Maintenance..	800 00	Sewer Dept., Construction.	800 00
Street Dept., Construction..	409 84	Street Dept., Paving.....	409 84
Water Works, Interest.....	4,467 27	Water Works:— Sinking Fund.....:	4,467 27
Water Works, Maintenance		R. F. etc., Abatements...	852 15
Pumping.....	1,676 62	R. F. etc., Refunds..... Supplies, Abatements....	106 93 717 54
	$26,628 60		$26,628 60

Expenditures of the Different Departments from 1891 to 1897 inclusive.

Names of Departments.	Expended in 1891.	Expended in 1892.	Expended in 1893.	Expended in 1894.	Expended in 1895.	Expended in 1896.	Expended in 1897.
Ambulance Department				$625 00	$2,269 15	$2,452 39	
Assessors' Department	$9,585 82	$10,665 86	$10,922 58	10,919 65	12,797 40	12,943 24	$13,077 44
Auditing Department	3,118 43	3,167 32	3,445 86	3 983 67	3,352 03	3,567 88	3,511 12
Cemetery Department	18,131 22	16,791 09	19,462 59	17,998 89	16,999 40	20,000 00	19,846 77
City Clerk Department	5,656 66	5,996 68	5,978 12	6,229 55	6,404 25	7,107 04	7,193 53
City Messenger Department	2,533 83	2,518 16	2,525 96	2,587 54	2,645 92	2,763 59	2,799 51
Civil Service Department	224 80	225 00	240 50	224 50	275 00	249 97	248 07
Clerk of Committees Department	3,428 36	3,451 52	3,526 06	3,597 37	3,708 47	3,925 34	3,946 56
Contingent Fund	8,075 97	7,212 36	10,847 07	15,348 28	14,514 68	16,139 18	7,966 46
Election Expenses	7,385 56	10,557 49	12,044 88	9,692 50	9,476 60	12,463 99	9,943 08
Engineering Department	9,448 59	9,902 11	9,644 00	15,279 50	22,743 52	14,211 55	12,969 29
Executive Department	2,583 60	4,387 95	4,641 40	4,825 08	5,362 15	5,414 08	5,299 35
Fire Department	66,773 83	61,016 48	61,627 27	72,488 69	82,171 99	85,467 88	78,687 13
Health Department	4,392 39	4,887 62	5,475 37	6,097 88	11,482 98	16,999 55	17,059 35
Inspection of Milk and Vinegar.	1,041 24	999 90	1,298 76	1,350 00	1,388 14	1,586 24	1,583 90
Inspection of Provisions, etc.				756 06	747 89	793 60	796 19
Inspection of Wires	7,299 85	12,548 88	9,545 07	10,148 01	10,399 82	11,999 74	10,699 98
Interest	127,180 58	134,036 63	136,877 92	126,289 20	118,099 84	132,099 07	134,396 40
Lamp Department	47,989 92	63,862 68	66,615 93	68,988 81	69,926 61	67,325 31	69,264 96
Law Department	2,830 94	3,044 37	3,206 19	3,272 94	3,970 45	5,197 44	5,189 88

Expenditures of the Different Departments from 1891 to 1897 inclusive — Continued.

Overseers of the Poor Department	83,104 59	88,370 89	97,570 17	100,810 42	100,841 33	105.379 81	106,373 80
Park Department			339 13	258,276 09	222,475 05	256,490 43	211,783 90
Plumbers' Examiners Departm't				119 95	153 81	101 05	116 40
Police Department	98,363 28	104,547 24	111,581 80	110,244 91	110,784 22	110,111 14	113,550 42
Public Library	13,426 22	13,638 57	14,585 44	29,875 62	21,064 83	18,493 00	19,823 36
Public Property	204,185 24	178,324 92	149,280 61	187,922 57	154,289 89	176,264 31	222,216 56
School Department	213,934 48	224,670 38	238,018 21	248,265 10	258,766 08	272,481 50	282,400 45
Sealer of Weights and Measures	1,560 44	1,684 10	1,654 93	1,598 95	1,491 29	1,570 52	1,619 73
Sewer Department	52,893 68	42,324 49	40,597 04	92,635 43	87,553 59	106,688 27	64,231 45
Sinking Funds	75,170 00	91,770 00	104,095 00	100,390 00	106,940 00	93,765 00	104,725 00
State Aid	22,693 05	25,262 30	25,469 80	24,669 55	23,159 91	23,209 03	23,491 36
Stationery and Printing	2,998 70	2,677 87	2,533 89	2,739 13	2,843 14	2,939 79	2,847 32
Street Department (Roads and Bridges)	299,284 55	310,948 66	243,032 63	285,348 54	259,953 37	323,912 86	412,986 18
Treasury Department	11,629 03	11,680 62	12,179 00	12,542 01	13,471 50	13,995 46	14,415 54
Water Works Department	297,901 16	497,772 78	430.846 12	420,688 47	758,054 81	1,045,529 76	794,179 98
Taxes: —							
Abatements	19,719 39	23,647 67	24,678 10	26,926 07	19,427 40	17,922 54	22,081 73
County	49,851 13	60,845 07	63,569 57	68,110 25	73,887 84	78,321 11	73,887 84
Metropolitan Sewer		6,809 57	17,363 62	45,483 43	61,886 21		137,297 30
National Bank	6,851 10	7,459 69	6,659 26	7,372 24	7,136 92	6,632 77	7,995 91
State	46,440 00	54,495 00	77,850 00	62,280 00	46,800 00	54,600 00	54,600 00
Total	$1,827,687 63	$2,102,201 62	$2,029,829 49	$2,467,001 85	$2,729,717 48	$3,131,115 43	$3,075,103 20

Comparative Statement by Decades from 1855 to 1895.

	1855.	1865.	1875.	1885.	1895.
Population	20,637	29 112	47,838	59,660	81,643
Valuation	$15,437,100 00	$26,085,900 00	$66,623,014 00	$55,346,555 00	$80,911,060 00
City Tax	100,604 53	267,708 60	1,060,396 52	804,800 00	1,103,455 30
County Tax	10,137 78	18,280 99	37,580 73	29,381 54	73,887 84
State Tax	5,190 00	118,487 00	58,880 00	44,835 00	46,800 00
Tax rate per $1,000	7 10	15 00	17 00	15 50	15 70
Total Expenditures	173,533 58	536,911 82	2,605,267 74	2,354,298 69	3,686,702 54
City Debt	146,600 00	833,092 00	4,106,843 21	2,361,396 50	3,913,634 23
Expenditures by Departments:—					
Bridges	890 31	9,007 77	39,068 39	11,829 77	16,297 33
Cemeteries	6,553 67	16,742 29	19,438 66	80,399 22	16,999 40
Fire Dept	9,623 70	21,958 74	89,949 99	59,341 15	104,898 59
Lighting Streets	2,987 32	9,062 24	20,919 04	32,269 07	69,926 61
Pauper Dept	8,520 41	21,481 52	79,719 54	56,338 24	100,841 33
Police Dept	4,499 56	22,833 14	71,093 35	78,357 73	110,784 22
Public Library		1,111 77	6,040 04	6,643 51	21,034 83
Schools	32,169 16	81,842 47	258,985 15	227,511 77	362,353 79
Sewers	4,610 68	3,683 07	135,432 28	40,945 40	149,459 89
Streets	14,554 73	35,638 38	155,476 90	148,088 65	252,154 62
Water Works		20,327 79	234,431 03	485,691 04	758,054 81

MUNICIPAL STATISTICS OF THE CITY OF CAMBRIDGE FROM 1846 TO 1897, INCLUSIVE.

YEAR ENDING FEBRUARY 28–9.

	1847.	1848.	1849.	1850.	1851.	1852.	1853.	1854.	1855.
Population	.....	.....	.....	15,215	.....	.....	.....	.....	20,473
Valu'n of the city.	.....	$9,806,529	$12,575,015	$10,667,272	$11,469,618	$12,392,440	$13,175,257	$13,599,360	$15,437,100
Total Expendit's.	$40,725	75,799	85,635	76,470	98,470	114,956	136,260	118,194	123,543
Amount of Debt..	23,184	50,523	52,378	63,670	91,661	117,045	134,800	147,920	148,154
Tax Rate per $1000	5.00	5.40	5.50	6.30	6.30	6.30	7.50	6.50	7.10
Pauper Dep't.....	11,035	7,300	5,242	5,438	5,290	8,498	7,248	8,787	7,139
Fire Dep't.....	2,928	2,911	4,539	6,822	5,667	9,537	10,919	11,525	9,469
Street Dep't.....	.....	8,858	13,737	9,871	9,981	9,995	11,588	15,312	17,542
Sewer Dep't.....	13.00	1,225	1,122	377	6,526	6,158	5,599	4,917	4,610
School Dep't.....	14,954	35,346	36,075	22,339	23,932	42,253	59,909	31,467	30,652
Public Library....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Police Dep't.....	2,017	3,550	3,657	3,535	3,750	4,090	4,155	5,227	4,435
Value of S'g F'ds.	.....	.....	.....	.....	.....	.....	.....	.....	.....

YEAR ENDING NOVEMBER 30.

	1855 (9 months).	1856.	1857.	1858.	1859.	1860.	1861.	1862.	1863.
Population	.....	.....	.....	.....	.....	26,060	.....	.....	.....
Valu'n of the city.	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total Expendit's.	$16,111,700	$18,038,650	$20,148,150	$20,261,850	$20,603,000	$21,280,700	$21,687,700	$21,527,100	$22,549,200
Amount of Debt..	99,722	168,810	210,539	216,859	186,966	195,569	233,918	435,157	338,517
Tax Rate per $1000	136,334	207,814	241,569	253,056	239,237	258,346	252,052	501,934	606,317
Pauper Dep't.....	7.60	7.70	8.00	9.10	8.60	9.00	9.50	10.00	11.00
Fire Dep't.....	3,983	6,999	10,487	9,603	8,846	8,360	9,934	14,303	18,909
Street Dep't.....	5,813	14,065	15,276	12,096	13,284	12,772	13,102	14,574	23,609
Sewer Dep't.....	14,296	31,748	33,157	38,641	29,369	32,803	30,733	30,899	37,413
School Dep't.....	5,766	11,252	11,218	9,267	7,732	6,624	3,869	953	5,380
Public Library....	24,219	47,787	61,588	51,888	53,058	43,468	61,423	50,239	72,280
Police Dep't.....	.....	.....	.....	.....	382	382	445	375	313
Value of S'g F'ds.	4,600	8,736	11,849	13,514	12,511	14,396	13,760	13,944	14,505

	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.
Population	.....	29,112	.....	.....	.....	.....	39,634	.....	.....	.....	.....	47,838	.....	.....	.....	.....	52,740
Valuation of the city	$23,271,500	$26,085,900	$28,385,700	$31,353,500	$34,093,800	$39,210,900	$43,097,200	$46,859,800	$55,248,350	$62,421,215	$66,576,671	$66,623,014	$62,636,453	$55,755,050	$49,615,140	$49,238,098	$49,629,060
Total Expenditures	532,663	536,911	580,866	648,798	655,930	777,940	975,518	1,263,417	1,284,314	2,065,858	2,485,299	1,759,773	1,565,737	1,351,132	1,134,666	1,082,487	1,562,703.36
Amount of Debt	830,236	1,104,782	968,974	1,164,284	1,265,276	1,393,050	1,678,917	1,971,010	2,185,843	3,127,677	4,400,603	4,706,755	4,830,174	4,923,253	4,886,822	4,863,334	4,887,063.53
Tax Rate per $1,000	11.50	15.00	13.20	15.20	13.80	14.00	14.00	15.60	12.00	13.50	12.50	17.00	16.00	17.20	18.00	17.00	16.00
Pauper Department	19,290	21,481	28,168	26,107	31,210	36,719	39,395	42,024	42,610	64,051	70,562	80,719	86,469	71,694	44,835	39,403	24,750.31
Fire Department	20,966	21,958	22,389	28,087	27,624	63,788	41,595	51,895	42,373	59,452	97,355	89,949	77,417	68,512	59,939	51,664	61,437.88
Street Department	39,528	44,700	47,057	54,170	55,093	112,800	214,200	265,207	199,186	246,833	303,522	172,331	152,959	120,801	104,772	95,557	61,044.63
Sewer Department	2,764	3,683	7,194	6,992	10,793	35,106	115,191	35,286	72,356	111,871	258,927	135,432	84,383	37,521	9,538	7,810	11,293.43
School Department	105,257	81,842	106,913	108,586	131,412	141,216	158,452	250,901	235,706	219,151	260,187	262,934	210,538	188,564	168,938	162,503	161,685.46
Public Library	590	1,111	1,028	1,093	1,357	1,185	1,910	2,894	3,393	3,944	5,129	6,040	5,961	6,042	6,000	5,993	5,999.77
Police Department	18,514	22,833	30,387	34,796	36,507	37,832	42,547	57,988	58,293	62,067	71,710	71,093	71,405	66,850	65,395	59,848	53,837.99
Value of Sinking Funds	.....	.....	6,367	18,935	24,100	28,086	59,673	89,811	171,183	295,012	468,669	606,759	711,387	899,325	1,139,621	1,396,523	1,648,128.19

	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.
Population	.....	.....	.....	.....	59,660	.....	.....	.....	.....	70,028	.....	.....	.....	.....	81,643	.....	.....
Valuation of the city	$51,676,490.00	$50,668,280.00	$51,797,340.00	$53,548,691.00	$55,346,555.00	$59,445,670.00	$59,703,610.00	$62,717,340.00	$65,284,275.00	$67,574,925.00	$70,628,170.00	$74,355,695.00	$76,293,989.00	$77,535,620.00	$80,911,060.00	$83,750,095.00	$86,641,745.00
Total Expenditures	1,949,966.49	1,943,736.07	2,718,353.15	2,799,300.62	2,354,298.69	2,264,507.88	2,350,870.17	2,335,878.83	2,404,814.61	2,416,089.61	2,346,525.14	2,955,255.17	2,846,618.68	2,909,891.87	3,686,702.54	4,251,759.27	3,698,004.00
Amount of Debt	3,154,000.00	3,055,000.00	2,450,000.00	1,762,000.00	1,838,000.00	1,696,000,00	1,616,000.00	1,899,000.00	1,944,000.00	2,044,000.00	2,294,000.00	2,439,000.00	2,216,000.00	2,721,000.00	2,756,000.00	3,313,000.00	3,623,500.00
Tax Rate per $1,000	16.00	16.60	16.40	16.80	15.50	15.00	16.00	15.00	16.00	15.60	15.50	16.00	16.40	15.80	15.70	15.10	17.50
Overse'rs of the Poor Dep't	41,251.32	46,284.88	43,499.98	49,220.63	56,338.24	62,516.86	63,090.57	68,525.95	77,021.68	76,421.69	83,104.59	88,370.89	97,570.17	100,810.42	100,841.33	105,379.81	106,373.80
Fire Department	55,721.90	58,332.02	59,641.15	58,138.65	59,341.15	58,375.98	61,130.09	61,136.36	55,559.57	62,772.45	79,545.84	74,382.92	97,104.55	117,430.19	104,898.59	117,596.44	78,687.13
Street Department	83,048.63	105,591.38	117,856.40	138,837.82	144,074.72	153,693.54	182,017.19	331,601.84	350,237.91	222,745.53	299,284.55	310,948.66	243,032.63	285,348.54	259,953.37	323,912.86	346,409.02
Sewer Department	17,501.63	35,170.37	38,275.61	33,864.93	40,945.40	52,737.08	76,878.43	65,489.30	66,694.99	50,783.33	52,893.68	42,324.49	40,597.04	92,635.43	87,553.59	106,688.27	64,231.45
School Department	167,703.45	194,389.22	194,811.77	223,428.82	227,511.77	245,466.14	235,908.36	250,755.21	281,242.12	398,976.77	373,008.36	365,103.23	316,695.23	363,719,70	362,353.79	379,903.22	471,725.71
Public Library	6,299.50	6,927.52	7,455.50	6,494.15	6,643.51	6,893.47	8,532.65	8,299.62	9,490.17	11,875.87	13,426.22	13,638.57	14,585.44	29,875.62	21,034.83	18,493.00	19,823.36
Police Department	57,013.33	61,896.64	68,101.37	74,218.59	78,357.73	80,404.44	80,223.88	86,308.25	87,400.68	94,872.37	98,363.28	104,547.24	122,656.80	110,244.91	110,784.22	110,111.14	113,550.42
Value of Sinking Funds	1,356,391.87	1,491,512.45	1,120,317.19	590,196.54	542,954.20	467,182.12	428,564.59	499,968.28	483,060.78	549,905.82	651,826.93	772,280.01	632,815.14	628,289.05	511,816.53	581,668.24	714,973.91

APPROPRIATIONS AND EXPENDITURES

The Amount of the Several Appropriations made by the City Council during the Year — The Transfers from One Appropriation to Another — The Expenditures in Detail under each Appropriation, and the Unexpended Balances, Nov. 30, 1897.

APPROPRIATIONS AND EXPENDITURES

Assessors' Department.

Appropriation			$13,000 00
Additional appropriation			77 44
			$13,077 44
	EXPENDED.		
For Salaries of Assessors:—			
John M. Davis	$1,666 67		
J. G. Gooch	2,000 00		
A. J. Green	2,000 00		
S. L. Montague	333 33		
Assistant Assessors:—			
Edwin K. Hall	336 00		
Warren Ivers	336 00		
Geo. H. Munroe	376 00		
D. B. Shaughnessy	200 00		
Arthur M. Stewart	374 00		
Clerks:—			
Carrie A. Estes	720 00		
Helen P. Hooker	720 00		
Jessie I. R. Waterman	720 00		
Temporary Clerks	2,251 89		
		$12,033 89	
Abstracts, Byron Boyd		29 00	
Advertising, Cambridge Chronicle Co.		66	
Boxes, Chas. E. Pierce & Co.		10 80	
Carriage hire, Whiting & Smith		20 00	
Car tickets, W. E. Street Railway Co.		50 00	
Directories:—			
E. F. Hunt & Co.	$3 00		
Sampson, Murdock & Co.	5 00		
		8 00	
Amounts carried forward		$12,152 35	$13,077 44

Assessors' Department — Concluded.

Amounts brought forward		$12,152 35	$13,077 44
For Expressage, Hatch & Co.		40	
Stationery, printing, etc.:—			
Cambridge Chronicle Co. .	$647 25		
Cotton & Gould	77 67		
James H. Cox	2 50		
E. W. S. Jones	106 37		
Stationery Department .	85 15		
Chas. H. Thurston . . .	75		
		919 69	
Subscription, Banker and Tradesman . .		5 00	
Total			$13,077 44

Auditing Department.

Appropriation			$3,600 00
EXPENDED.			
For Salaries of			
City Auditor, Harry T. Upham	$2,100 00		
Clerk, Esther L. Cogan .	782 50		
Temporary Clerk, Helen K. Small	175 63		
		$3,058 13	
Binding, J. H. H. McNamee		1 00	
Directory, E. F. Hunt & Co.		3 00	
Files, Geo. H. Richter & Co.		90 00	
Labor in vault, T. J. Denton		5 00	
Sharpening erasers, etc., Geo. W. Buzzell		2 00	
Stamps and repairs, L. W. Poole . . .		4 20	
Stationery and printing:—			
Cotton & Gould	$17 70		
James H. Cox	108 25		
Lombard & Caustic . .	39 13		
Stationery Department .	57 71		
Thorp & Martin Co. . .	44 00		
John Wilson & Son . .	77 00		
		343 79	
Amounts carried forward		$3,507 12	$3,600 00

Auditing Department — Concluded.

Amounts brought forward		$3,507 12	$3,600 00
For Subscriptions:—			
F. L. Beunke	$2 50		
James Cox	1 50		
		4 00	
Total			3,511 12
Balance unexpended			$88 88

Bridge Department.

Appropriation			$14,000 00
RECEIVED.			
For Rents, Wharfage, etc.		$796 74	
EXPENDED.			
For Salaries of			
Bridge Commissioner and Harbor Master, Wm. J. Marvin	$800 00		
Clerk, Chas. S. Parsons .	250 00		
Draw-tenders and Assistants	4,086 17		
		5,136 17	
Advertising		48 12	
Blankets, curtains, etc.:—			
J. H. Corcoran & Co.		8 68	
Car fares and messenger fees:—			
Chas. S. Parsons		65 93	
Carpentry:—			
Thos. Quinn	$71 25		
Josiah Shaw	326 63		
		397 88	
Car tickets, W. E. Street Railway Co. .		12 50	
Cash for labor and supplies:—			
M. F. Corkery	$140 54		
Jas. A. Gorman	1 50		
A. W. Smith	123 49		
N. E. Story	100 73		
		366 26	
Amounts carried forward		$6,035 54	$14,000 00

Bridge Department — Continued

Amounts brought forward		$6,035 54	$14,000 00
For Current for Harvard Bridge Draw, Cambridge Electric Light Company . . .		143 75	
Electrical repairs, City of Boston . . .		6 71	
Fuel:—			
Marston & Converse Co. .	$44 84		
Geo. M. Winslow & Co. .	177 63		
		222 47	
Hose, Boston Woven Hose Co.		6 00	
Ice:—			
Boston Ice Co.	$9 00		
Drivers Union Ice Co. .	3 75		
		12 75	
Iron work:—			
Thos. J. Emery	$20 65		
Miller & Shaw	114 81		
		135 46	
Insurance, A. M. Stewart		18 25	
Labor, sundry persons		109 44	
Lighting:—			
Boston Electric Light Co.	$578 23		
Cambridge Electric Light Co.	1,188 34		
		1,766 57	
Lumber:—			
John S. Clary	$77 22		
Geo. W. Gale Lumber Co.	1,094 28		
G. H. Jennings, Jr. . .	88 49		
Geo. McQuesten & Co. .	17 94		
E. D. Sawyer & Co. . .	93 99		
John M. Woods & Co. .	33 34		
Wm. H. Wood & Co. . .	9 54		
		1,414 80	
Mason work, John B. Byrne		25 40	
Oils, Paints etc.:—			
Gould & Cutler	$4 50		
Merrill, Dexter & Co. . .	105 17		
Standard Oil Co. . . .	9 12		
		118 79	
Amounts carried forward		$10,015 93	$14,000 00

Bridge Department — Concluded.

Amounts brought forward		$10,015 93	$14,000 00
For Painting, Thos. Knowles		200 70	
Papering, C. H. Holm		5 13	
Paving, Austin Ford & Son .	$381 41		
Albert A. Libby & Co. .	66 21		
		447 62	
Repairs, sidewalk, fence and draw:—			
Wm. H. Ryan & Co.		2,576 37	
Roof repairs:—			
Morrissey & Coughlin . .	$2 83		
National Roofing Co. . .	43 85		
		46 68	
Salt, Chas. L. Davenport		6 50	
Stationery, printing:—			
City of Boston	$49 45		
J. L. Fairbanks & Co. . .	8 60		
Rockwell & Churchill . .	6 09		
		64 14	
Sundries		9 29	
Tar, Cambridge Gas Light Co.		18 75	
Teaming:—			
Austin Ford & Son . . .	$98 25		
Chas. Linehan	70 88		
John Quinn	7 25		
John F. Quinn	56 40		
John T. Scully	209 31		
		442 09	
Tools, hardware, supplies:—			
Dodge, Haley & Co. . .	$26 69		
Magee Furnace Co. . . .	5 12		
Wm. T. McGuire . . .	17 38		
McKenney & Waterbury .	38 46		
J. M. Price & Son . . .	13 84		
Standard Brass Co. . . .	10 19		
Whittier Hardware Co. .	9 80		
Sundry persons	10 31		
		131 79	
Water Rates, City of Boston		32 50	
Total			13,997 49
Balance unexpended			$2 51

Cemetery Department.

Appropriation			$20,500 00
RECEIVED.			
For Brick graves		$36 00	
Burials		4,990 00	
Care		2,990 02	
Foundations		941 55	
Grading and sodding		273 50	
Interest on Cemetery Fund		1,381 27	
Myrtle graves		10 50	
Sales		8,678 63	
Slate graves		164 00	
Sundries		178 58	
		$19,644 05	
EXPENDED.			
For Salaries of			
Supt., Chas. S. Childs	$1,600 00		
Asst. Supt., Henry C. Hobbs	1,003 75		
Bookkeeper, J. Watson Taylor	1,095 00		
Clerk, Edw. J. Brandon	100 00		
Laborers	11,488 14		
		15,286 89	
Architect, Geo. Fogerty		150 00	
Building addition to office, Wm. Crane		1,343 00	
Broom stock, Stephen Adams		11 00	
Carpentry:—			
C. E. McKinnon	$78 27		
Steadman A. Rice	4 10		
		82 37	
Carriage hire:—			
J. Callahan	$9 50		
Jos. LeFarve	4 50		
Frank P. Merrill	30 00		
		44 00	
Car tickets, W. E. Street Railway Co.		40 00	
Clothing, Oak Hall Clothing Co.		33 74	
Decorating, N. E. Decorating Co.		5 00	
Directories, W. A. Greenough & Co.		6 00	
Expressage		5 15	
Amounts carried forward		$17,007 15	$20,500 00

Cemetery Department — Continued.

Amounts brought forward		$17,007 15	$20,500 00
For Fuel:—			
L. G. Burnham & Co. . .	$47 60		
J. A. Heaton	9 96		
		57 56	
Furnace work, etc., D. J. Wild & Co. .		24 50	
Furnishings, Worcester Bros.		34 54	
Glass, Pittsburgh Plate Glass Co. . . .		20 00	
Graves, boxes and covers, H. H. Matthews		202 04	
Hardware, tools, etc.:—			
Baldwin, Robbins & Co. .	$26 65		
Burditt & Bynner . . .	113 37		
F. A. White	26 33		
D. J. Wild & Co. . . .	11 90		
		178 25	
Hay and grain, E. R. Luke & Co. . . .		108 48	
Horse-shoeing, Wm. Balmer	$23 75		
G. W. Lowd	23 00		
		46 75	
Hose, D. J. Wild & Co.		20 00	
Hot-beds, A. W. Hastings & Co. . . .		11 10	
Lettering stone, Wm. McNamee		6 00	
Lumber, cement, Geo. W. Gale Lumber Co.		68 24	
Manure, James Brown		111 56	
"Mortuary Law," Geo. B. Reed . . .		6 00	
Moving safe, J. Manning & Sons . . .		5 00	
Numbers and letters:—			
Jos. W. Grigg	$38 93		
Wm. A. McNamee . . .	12 00		
		50 93	
Painting, etc.:—			
C. S. Brookings	96 70		
Louis Buknam	16 50		
		113 20	
Pipe, etc., Walworth Mfg. Co.		77 74	
Plants, P. O'Brien & Son		83 50	
Postage, Chas. S. Childs		8 00	
Repairing tools, Chapman Carriage Co. .		57 24	
Return of fee, Ruth W. Dodge		17 00	
Sand, John Doody		10 50	
Amounts carried forward		$18,325 28	$20,500 00

Cemetery Department — Concluded.

Amounts brought forward		$18,325 28	$20,500 00
For Sods and grass:—			
Jos. Breck & Sons	$4 45		
James Gray	171 57		
		176 02	
Stairs, Chelmsford Foundry Co.		78 00	
Stone dust, Jeremiah Sullivan		379 72	
Stone posts, Austin Ford & Son		85 00	
Stone work:—			
Wm. A. McNamee	$34 06		
Alexander Wight	22 15		
		56 21	
Stationery, printing:—			
Amee Bros.	$17 90		
Cotton & Gould	111 10		
John H. Ford	17 40		
Lombard & Caustic	69 30		
		215 70	
Sundries		20 90	
Teaming, John Doody		378 13	
Telephone rent and tolls		80 35	
Watering Tax, City of Cambridge		51 46	
Total			19,846 77
Balance unexpended			$653 23

City Clerk Department.

Appropriation			$7,200 00
RECEIVED.			
For Fees from sundry persons		$2,552 25	
EXPENDED.			
For Salaries of			
City Clerk, Edw. J. Brandon	$3,000 00		
Asst. City Clerk, Albert M. Pear	1,400 00		
Clerk, Amanda Richardson	600 00		
Temporary Clerks	759 85		
		$5,759 85	
Amounts carried forward		$5,759 85	$7,200 00

City Clerk Department — Continued.

Amounts brought forward		$5,759 85	$7,200 00
Badges, Burditt & Bynner		15 00	
Badges (redeemed) E. J. Brandon . . .		37 20	
Binding, etc.:—			
Chas. W. Facey	$4 00		
J. H. H. McNamee . . .	11 05		
		15 05	
Books, Geo. B. Reed		9 50	
Boxes:—			
Chas. E. Pierce & Co. . .	$7 20		
Chas. Place	11 85		
		19 05	
Canvassing for births:—			
John M. Davis	$42 00		
M. F. Ellis	33 00		
Emile J. Grenier . . .	51 00		
Warren Ivers	42 00		
Jas. E. Lennon	72 00		
John Loughrey	30 00		
John L. Morrissey . . .	40 50		
		310 50	
Car tickets, W. E. Street Railway Co. .		5 00	
Cash paid for legislative bulletin, E. J. Brandon		25 85	
Desk, Geo. H. Richter & Co.		33 50	
Directories:—			
E. F. Hunt	$3 00		
Sampson, Murdock & Co.	5 00		
		8 00	
Expressage		7 96	
Lettering, Lamson Sign Co.		14 06	
Numbering machine, H. C. Dimond & Co.		8 00	
Posting and serving notices:			
John M. Davis	$9 55		
John Donnelly & Sons .	3 00		
Walter F. Hayward . .	38 15		
Jas. E. Lennon	16 79		
John T. Lynch	2 00		
F. E. Shaw	13 55		
		83 04	
Amounts carried forward		$6,351 56	$7,200 00

City Clerk Department — Concluded.

Amounts brought forward		$6,351 56	$7,200 00
For recording deeds, E. O. Childs		18 45	
Reporting births		270 75	
Stamps		9 40	
Stationery and printing:—			
F. L. Beunke	$23 65		
Cambridge Chronicle Co. .	109 05		
Cotton & Gould	95 17		
James H. Cox	43 00		
H. J. Duffy	9 00		
J. Frank Facey	26 25		
John H. Ford	23 25		
E. W. S. Jones	10 75		
Lombard & Caustic . . .	31 27		
Henry M. Meek	21 50		
Stationery Department .	126 73		
Sundry persons	8 85		
		528 47	
Subscriptions:—			
Cambridge Chronicle Co. .	$6 00		
James Cox	1 50		
		7 50	
Sundries		7 40	
Total			7,193 53
Balance unexpended			$6 47

City Messenger Department.

Appropriation			$3,000 00
EXPENDED.			
For Salaries of			
City Messenger, F. L. Pratt .	$1,800 00		
Assistant City Messenger, C. M. Jones	606 67		
		$2,406 67	
Carriage hire:—			
J. E. Fabyan	$3 00		
Lake & Moynahan . . .	7 50		
Whiting & Smith . . .	2 00		
		12 50	
Amounts carried forward		$2,419 17	$3,000 00

City Messenger Department — Concluded.

Amounts brought forward		$2,419 17	$3,000 00
For Car tickets, W. E. Street Railway Co. .		65 00	
Directory, E. F. Hunt		3 00	
Expressage: —			
Geo. Dorr	25		
Hatch & Co.	$25 30		
Savage & Son	30		
		25 85	
Rent of P. O. Box: —			
H. A. Thomas		10 00	
Stationery and printing: —			
James H. Cox	$1 75		
Stationery Dept.	120 46		
		122 21	
Subscriptions: —			
F. L. Beunke	$6 00		
James Cox	1 50		
		7 50	
Sundries		5 35	
Telephone rent and tolls		141 43	
Total			2,799 51
Balance unexpended			$200 49

Civil Service Department.

Appropriation			$250 00
EXPENDED.			
For Salary of			
Clerk, Harry L. Lincoln		$200 00	
Boxes, Chas. E. Pierce & Co.		2 40	
Stationery, Thorpe & Martin Co. . . .		45 67	
Total			248 07
Balance unexpended			$1 93

Clerk of Committees Department.

Appropriation			$4,000 00
EXPENDED.			
For Salaries of			
Clerk of Committees, John McDuffie	$2,400 00		
Asst. Clerk of Committees, Eben W. Pike	1,200 00		
		$3,600 00	
Binding, J. H. H. McNamee		16 25	
Car tickets, W. E. Street Railway Co.		10 00	
Directories:—			
E. F. Hunt & Co.	$3 00		
Sampson, Murdock & Co.	5 00		
		8 00	
Stationery and printing:—			
F. L. Beunke	$8 50		
Cambridge Chronicle Co.	95 00		
Cotton & Gould	41 80		
Greenough, Adams & Cushing	12 00		
Geo. H. Richter & Co.	5 20		
Stationery Department	133 91		
		296 41	
Sundries		4 05	
Subscriptions:—			
Cambridge Chronicle Co.	$5 00		
James Cox	1 50		
		6 50	
Typewriter repairs, Geo. H. Richter & Co.		5 35	
Total			3,946 56
Balance unexpended			$53 44

Contingent Fund.

Appropriation			$12,000 00
Transferred to sundry departments			2,304 76
			9,695 24
RECEIVED.			
For Costs in suit for taxes		$21 27	
Damages		20 00	
Amounts carried forward		$41 27	$9,695 24

Contingent Fund — Continued.

Amounts brought forward		$41 27	$9,695 24
For Dividend from insolvent estate . . .		3 14	
Hawkers' and pedlers' licenses . . .		150 00	
Liquor licenses		50 00	
"Paige's History" (six copies) . . .		18 00	
Settlement of suit against bondsmen of John F. Brosnahan		700 00	
Taxes (old)		4 00	
		$966 41	

EXPENDED.

For Building fence, Thos. S. Hall		$16 99	
Century Digest, West Pub. Co.		6 00	
City Council expenses:—			
Salaries of			
Clerk, Edw. A. Counihan	$300 00		
Page, Chas. M. Jones .	100 00		
Barge hire, John Nixon .	7 00		
Carriage hire	111 50		
Car tickets, W. E. Street Railway Co.	425 00		
Die for city seal, etc.:—			
Jas. S. Conant & Co. .	108 30		
Engrossing Memorial Resolutions:—			
Frank L. Wells . . .	16 00		
John R. Wilson . . .	5 50		
Floral designs:—			
Wm. E. Doyle . . .	35 00		
P. O'Brien & Son . .	39 00		
Lunches:—			
M. R. Jones	60 00		
Mansion House . . .	5 00		
Nutter & Whippen . .	2 40		
W. S. Sprague . . .	2 45		
Typewriting, G. B. French	46 35		
		1,263 50	
Costs in suits, Boston & Albany R. R. Co.		25 00	
Amounts carried forward		$1,311 49	$9,695 24

Contingent Fund — Continued.

Amounts brought forward		$1,311 49	$9,695 24
For Damages awarded and suits settled:—			
Mary E. Blatchford . .	$450 00		
Myer Borenstein	100 00		
Cashman & Earl . . .	150 00		
Geo. B. Clark	25 00		
Eliza A. Gabriel . . .	175 00		
Finlay F. Grant and S. J. Wilde	225 00		
Robert Howley, *et al.* . .	100 00		
Bridget A. Lyons . . .	100 00		
Edwin Maker	125 00		
Emily L. Melvin . . .	35 00		
Mary L. Moriarty . . .	650 00		
Ella V. Moulton . . .	5 00		
The Piscataqua Navigation Co.	65 00		
Charlotte A. Ricker . .	250 00		
Erica A. Schirmer . . .	1,025 00		
Douglas C. Thompson .	100 00		
		3,580 00	
Examination of titles, Wm. V. Thompson		75 00	
Expenses of Mayor Bancroft's valedictory address:—			
Envelopes, Boston Mailing Co.	$15 02		
Printing, Lombard & Caustic	46 13		
		61 15	
Expenses, making valuations of plants:—			
Cambridge Electric Light Co.	$382 41		
Cambridge Gas Light Co.	441 73		
		824 14	
Invalid tax titles:—			
Alonzo V. Lynde . . .	$88 12		
Chas. E. Simpson . . .	83 81		
Stephen P. Weld . . .	34 79		
		206 72	
Amounts carried forward		$6,058 50	$9,695 24

Contingent Fund — Concluded.

Amounts brought forward		$6,058 50	$9,695 24
Liquor Licenses, Commonwealth of Massachusetts		12 00	
Memorial Day expenses		1,000 00	
For Memorial tablets:—			
Advertising	3 62		
Labor, as per pay-roll . .	45 75		
Stone work, Wm. A. Bertsch	10 05		
Tablets, E. L. Smith . .	414 94		
Teaming, Chas. McMahon	18 00		
		492 36	
Recording deeds, Edwin O. Childs . . .		12 60	
Rent, Union Hall Association		50 00	
Ringing bells on Holidays		117 00	
Transportation of military companies, Boston & Maine R. R. Co.		224 00	
Total			7,966 46
Balance unexpended			$1,728 78

Election Expenses, City Clerk.

Appropriation			$4,600 00
Transferred from Contingent Fund			350 00
			$4,950 00
EXPENDED.			
For Precinct Officers		$3,019 50	
Police Officers		312 50	
Bell Ringers		26 00	
Clerical Assistance:—			
Anne Jacobs	25 00		
John R. Wilson	2 50		
		27 50	
Advertising:—			
Cambridge Chronicle Co. .	13 15		
James Cox	66 75		
F. S. Hill	74 13		
Amounts carried forward . .	$154 03	$3,385 50	$4,950 00

Election Expenses, City Clerk — Continued.

Amounts brought forward . .	$154 03	$3,385 50	$4,950 00
The Sacred Heart Review	9 00		
Times Publishing Co. . .	20 00		
		183 03	
Barge hire:—			
A. Nixon	36 00		
John Nixon	78 00		
		114 00	
Binding, J. H. H. McNamee		97 15	
Boxes, Charles Place		11 60	
Carriage hire:—			
Chas. W. Dailey	5 00		
Aaron Hale	7 00		
Lake & Moynahan . . .	5 00		
C. H. Lake	6 50		
Whiting & Smith . . .	7 50		
		31 00	
Car tickets, W. E. Street Railway Co. . .		15 00	
Caucus Acts, Richard L. Gay		7 50	
Expressage and moving furniture, P. Biggin		20 50	
Hardware, tools etc.:—			
Burditt & Bynner . . .	10 35		
Phipps Bros.	60		
		10 95	
Labor, Thos. J. Denton		39 58	
Lunches, W. S. Sprague		22 18	
Paste, J. H. & J. P. Thayer & Co. . . .		2 10	
Posting and serving:—			
John M. Davis	6 60		
Jas. E. Lennon	3 00		
George H. Munroe . . .	9 00		
		18 60	
Repairing ballot boxes, Robert S. Robson		10 00	
Services, Chas. M. Jones		10 75	
Stamps and wax seal:—			
Boston Stencil & Stamps Works	53 10		
H. C. Dimond & Co. . .	7 50		
		60 60	
Amounts carried forward		$4,040 04	$4,950 00

Election Expenses, City Clerk — Concluded.

Amounts brought forward		$4,040 04	$4,950 00
For Stationery, printing and postage:—			
F. L. Beunke	$2 70		
Cambridge Chronicle Co. .	35 93		
Co-operative Printing Society	37 25		
Cotton & Gould	61 50		
James Cox	12 25		
James H. Cox	35 00		
J. Frank Facey	111 25		
John H. Ford	35 50		
Lombard & Caustic . .	473 01		
Stationery Department .	53 88		
		858 27	
Tape, J. H. Corcoran & Co.		3 30	
Tabulation sheet, George Davis		8 00	
Total			$4,909 61
Balance unexpended			$40 39

Election Expenses, Registrars of Voters.

Appropriation			$3,500 00
Transferred from Contingent Fund			183 92
			$3,683 92
EXPENDED.			
For Salaries of Registrars of Voters and Clerk:—			
Isaac Bradford	$500 00		
Wm. J. Breen	500 00		
James Cox	500 00		
Isaac S. Pear, Clerk . .	600 00		
		$2,100 00	
Clerical Assistance:—			
Isaac Bradford, Jr. . . .	3 00		
Anne Jacobs	167 00		
		170 00	
Amounts carried forward		$2,270 00	$3,683 92

Election Expenses, Registrars of Voters — Concluded.

Amounts brought forward , ...		$2,270 00	$3,683 92
For Clerical Assistance — Recount:—			
George M. Clukas . . .	10 20		
Edward A. Counihan . .	11 10		
John C. Cox	12 75		
John M. Davis	14 55		
Warren Ivers	14 70		
Charles M. Jones . . .	11 70		
Julius M. Nazro . . .	14 10		
Eben W. Pike	14 55		
D. B. Shaughnessy . . .	10 95		
J. Henry Webber . . .	14 70		
		129 30	
Advertising:—			
Boston Herald Co. . . .	4 00		
D. A. Buckley	29 25		
Cambridge Chronicle Co. .	13 89		
James Cox	34 25		
Globe Newspaper Co. . .	3 00		
F. S. Hill	34 25		
Journal Newspaper Co. .	5 00		
		123 64	
Binding, J. H. H. McNamee		84 35	
Carpentry, W. H. Norris		68 49	
Carriage hire, Aaron Hale		6 00	
Directory, E. F. Hunt		3 00	
Labor, Thos. J. Denton		28 15	
Paste, J. H. & J. P. Thayer & Co. . . .		1 14	
Posting:—			
John M. Davis	4 50		
George H. Munroe . . .	16 50		
		21 00	
Preparing Voting Lists, Anne Jacobs . .		12 00	
Stamps, Cotton & Gould		2 50	
Stationery, printing, postage:—			
James Cox	3 00		
James H. Cox	9 75		
E. W. S. Jones	24 30		
Stationery Department .	2 89		
John Wilson & Son . .	894 41		
		934 35	
Total			$3,683 92

Election Expenses — Superintendent of Buildings.

Appropriation			$1,200 00
Transferred from Contingent Fund			150 00
			$1,350 00
EXPENDED.			
For Carpentry, W. H. Norris		$314 48	
Heating Apparatus:—			
S. C. Higgins	$3 00		
J. F. O'Brien	40 00		
		43 00	
Lighting apparatus, George F. Dickson		15 00	
Preparing rooms for voting		270 07	
Rent:—			
Chas. Beck Post	$50 00		
Citizens' Trade Association	115 00		
E. L. Green	57 00		
Odd Fellows Hall Assoc'n	40 00		
Mt. Sinai Bldg. Assoc'n	80 00		
The Prospect Union	20 00		
Red Jacket Vet. Fireman's Association	35 00		
St. John's Literary Institute	125 00		
Union Hall Association	180 00		
		702 00	
Services as special police officer, Wm. Holden		5 00	
Total			1,349 55
Balance unexpended			45

Engineering Department.

Appropriation			$11,500 00
RECEIVED.			
For Services of City Engineer to Water Works		$2,000 00	
EXPENDED.			
For Salaries:—			
Engineer, L. M. Hastings	$3,000 00		
Assistants	6,403 19		
Clerk, Mary E. Rowen	392 50		
Temporary Clerk, Mabel Brewerton	44 88		
		$9,840 57	
Amounts carried forward		$9,840 57	$11,500 00

Engineering Department—Continued.

Amounts brought forward		$9,840 57	$11,500 00
For Binding, J. H. H. McNamee		39 00	
Books, T. H. Castor & Co.		3 30	
Carriage hire, Whiting & Smith . . .		24 00	
Car tickets, W. E. Street Railway Co. .		200 00	
Carpentry, W. H. Norris		9 50	
Cash expended, L. M. Hastings		3 97	
Cotton, D. W. Hyde & Co.		18 60	
Expressage:—			
American Express Co. .	40		
Hatch & Co.	$4 50		
Savage & Son	1 20		
		6 10	
Granite posts, John J. Horgan		25 00	
Hardware, tools and repairs, and supplies:—			
Burditt & Bynner . . .	$3 50		
James Maitland	10 89		
F. A. White	29 94		
		44 33	
Keys, Phipps Bros.		4 05	
Lithographs, Forbes Lithograph Mfg. Co.		81 52	
Photo. supplies and blue prints:—			
Boston Blue Print Co. . .	$2 50		
Benj. French & Co. . .	2 70		
Chas. E. Moss	92		
Spaulding Print Paper Co.	20 78		
		26 90	
Stakes, Ira G. Hersey		9 28	
Stamps:—			
H. C. Dimond & Co. . .	$2 15		
L. W. Poole	50		
		2 65	
Stationery, printing and drawing materials:—			
W. M. Belcher & Co. . .	$11 55		
Cotton & Gould	84 05		
Co-operative Printing Society	3 25		
John H. Ford	95 00		
Frost & Adams Co. . .	215 73		
Amounts brought forward . .	$409 58	$10,338 77	$11,500 00

Engineering Department — Concluded.

Amounts brought forward . .	$409 58	$10,338 77	$11,500 00
For stationery, printing and drawing materials: —			
J. Hildreth & Co. . . .	2 00		
Lombard & Caustic . .	9 54		
Lufkin Rule Co.	3 00		
Thos. H. McCollin & Co. .	4 45		
Chas. E. Moss	2 25		
N. Y. Multi-Color Copying Co.	5 00		
George H. Richter & Co. .	2 25		
E. G. Soltman	6 25		
Spaulding Print Paper Co.	7 84		
Stationery Department .	35 79		
Thorp & Martin Co. . .	4 85		
		492 80	
Telephone rent and tolls		135 40	
Testing standard of length, Charles W. Sherman		8 00	
Total			$10,974 97
Balance unexpended			$525 03

Engineering Department—Assessors' Plans.

Appropriation			$2,000 00
EXPENDED.			
For Salaries of Engineers		$1,878 02	
Mounting plans: —			
G. S. Whitehead	$37 80		
Henry T. Burrage	70 00		
		107 80	
Paper, Frost & Adams		8 50	
Total			1,994 32
Balance unexpended			$5 68

Executive Department.

Appropriation			$5,300 00
EXPENDED.			
For Salaries of			
Mayor, Wm. A. Bancroft	$320 84		
Mayor, Alvin F. Sortwell	3,179 16		
Clerk, Edw. A. Counihan	1,000 00		
Stenographer, Georgie W. Sanborn	271 67		
		$4,771 67	
Binding, J. H. H. McNamee		22 50	
Clerical assistance, J. Henry Webber		5 00	
Carriage hire:—			
Whiting & Smith	12 50		
Sundry persons	2 50		
		15 00	
Car tickets, W. E. Street Railway Co.		10 00	
Cutting die, stamping, etc., M. R. Warren Co.		24 12	
Decorating City Hall, N. E. Decorating Co.		25 00	
Directory, E. F. Hunt		3 00	
Engraving steel die of seal, John A. Lowell & Co.		69 93	
Stationery and printing:—			
Cotton & Gould	33 85		
James H. Cox	18 00		
J. Frank Facey	22 75		
Lombard & Caustic	22 63		
G. B. Lenfest	1 85		
Stationery Department	62 50		
		161 58	
Sundries		9 95	
Telephone rent and tolls		181 60	
Total			5,299 35
Balance unexpended			65

Fire Department.

Appropriation			$80,500 00
RECEIVED.			
For Board of horse		$107 00	
Damage to wagon		22 75	
Old furniture		2 00	
Rebate on bill		52 98	
Use of engine		30 00	
		$214 73	
EXPENDED.			
For Salaries of			
Chief T. J. Casey . . .	$1,800 00		
Assistant engineers,			
N. W. Bunker	375 00		
W. B. Cade	375 00		
Permanent men as per pay-rolls	46,075 91		
Call men as per pay-rolls .	17,349 31		
Substitute, John D. Shea .	42 50		
		66,017 72	
Apparatus and repairs:—			
Abbott, Downing Co. . .	631 53		
Cornelius Callahan . . .	15 00		
Chapman Carriage Co. .	134 55		
A. W. Edmands	20 00		
F. Ivers & Son	10 75		
A. S. Jackson	15 00		
T. H. Kneeland	17 35		
John Lane	24 00		
Manchester Locomotive Works	419 04		
John McIntosh	16 00		
Miller & Shaw	17 79		
Geo. Patterson	11 00		
C. N. Perkins & Co. . .	56 00		
O. F. Picott	13 00		
C. N. Richardson . . .	30 00		
Scrannage Brothers . . .	202 57		
Chas. Waugh & Co. . .	19 15		
Sundry persons	6 60		
		1,659 33	
Amounts carried forward		$67,677 05	$80,500 00

Fire Department — Continued.

Amounts brought forward		$67,677 05	$80,500 00
For Brooms, F. Pelkey		21 00	
Carriage hire:—			
J. E. Fabyan	10 00		
Jas. McGovern	10 00		
Whiting & Smith . . .	10 00		
		30 00	
Chamois skins:—			
Wm. P. Butterfield, Son & Co.	$12 00		
Terrill & Sons	13 00		
		25 00	
Clock Repairs		4 00	
Copper waste, Edw. H. Haskell . . .		30 80	
Disinfectant, Sulpho-Napthol Co. . . .		24 00	
Dues, Gas Consumers Association . . .		6 15	
Embroidery, C. A. Taylor		9 00	
Expressage and teaming:—			
Elliott & Devey	$20 00		
Savage & Son	7 42		
Sundry persons	2 65		
		30 07	
Fire hats, Hopkins & Wright		94 75	
Fuel:—			
Baker Hunnewell Co. . .	16 55		
L. G. Burnham & Co. . .	142 80		
J. A. Heaton	1,105 56		
H. Wellington & Co. . .	586 50		
Geo. M. Winslow . . .	473 73		
Weighing, H. W. Brooks .	11 75		
		2,336 89	
Furniture and furnishings:—			
J. H. Corcoran & Co. . .	27 25		
D. W. Hyde & Co. . . .	59 82		
C. B. Moller	18 00		
W. W. Pratt	5 50		
Worcester Bros.	161 98		
		272 55	
Amounts carried forward		$70,561 26	$80,500 00

Fire Department — Continued.

Amounts brought forward		$70,561 26	$80,500 00
For Gas checks, Hoyt Gas Appliance Co. .		5 00	
Hardware, tools and supplies:—			
Brock Bros.	$11 03		
Burditt & Bynner . . .	185 03		
F. A. White	25 00		
		221 06	
Harness and repairs:—			
Chas. E. Berry	$104 75		
James Curry	8 10		
Owen Doherty	100 85		
F. Ivers & Son	22 90		
G. A. Morse	20 50		
Wm. H. Roberts. . . .	107 00		
		364 10	
Hay, grain and straw:—			
J. S. Bradeen	$478 59		
Otis S. Brown & Co. . .	241 88		
E. R. Luke & Co. . . .	1,954 48		
McPherson Bros. . . .	344 30		
L. G. Stone & Co. . . .	7 50		
Geo. G. Wright	160 16		
		3,186 91	
Horse-shoeing:—			
Wm. Balmer	$38 25		
Wm. Bell	52 00		
D. L. Bolger	46 25		
T. Burke	66 75		
P. J. Callahan	66 00		
P. H. Dardis	39 13		
E. W. Fullerton	17 50		
W. F. Garrett	79 00		
J. F. Gurry	119 00		
C. M. Holt	8 00		
T. H. Jensen	23 50		
C. J. McCarthy	6 50		
Bernard Smith	130 50		
Thomas Smith	66 00		
		758 38	
Amounts carried forward		$75,096 71	$80,500 00

Fire Department — Continued.

Amounts brought forward		$75,096 71	$80,500 00
For Horses, P. H. Dardis		100 00	
Hose, etc., Boston Woven Hose Co. . .		925 68	
Hose jackets, Cooper Hose Jacket Co. .		75 00	
Ice:—			
Cambridge Ice Co. . . .	$15 60		
Fresh Pond Ice Co. . .	31 20		
Independent Ice Co. . .	4 50		
		51 30	
Ladders and repairs, C. W. H. Moulton & Co		235 80	
Laundry work, University City Laundering Co.		213 92	
Lighting:—			
Cambridge Elec. Light Co.	$285 79		
Cambridge Gas Light Co.	590 86		
		876 65	
Nutriotone, Frank P. Merrill		42 00	
Oil, polish, etc.:—			
Eagle Oil & Supply Co. .	$3 75		
Kimball, Freed & Co. . .	15 60		
C. M. Kimball	43 50		
Lustralis Mfg. Co. . . .	24 00		
Meyers Putz-Pomade Co. .	5 25		
Wm. F. Nye	9 90		
Standard Oil Co. . . .	29 70		
		131 70	
Packing, Gould Packing Co.		6 90	
Plumbing, D. J. Keefe & Co.		8 88	
Refreshments, Mansion House		15 00	
Repairs, Water Works		6 41	
Shavings, C. W. H. Moulton & Co. . .		9 00	
Soap, Chas. R. Teele		14 50	
Stationery, printing:—			
Cambridge Chronicle Co.	$19 75		
Cotton & Gould . . .	8 37		
Jas. H. Cox	10 25		
Lombard & Caustic . .	11 23		
Stationery department .	2 89		
		52 49	
Amounts carried forward		$77,861 94	$80,500 00

Fire Department — Concluded.

Amount brought forward		$77,861 94	$80,500 00
For Sundry supplies:—			
C. W. Carman	$7 81		
J. A. Holmes & Co. . .	81 54		
H. N. Hovey & Co. . .	10 24		
M. R. Jouett & Co. . .	5 17		
Geo. A. Wood	5 59		
Sundry persons	3 25		
		113 60	
Teaming, Thos. McSorley		5 50	
Telephone rent and tolls		157 80	
Use of men and horses:—			
T. A. Callaghan . . .	$81 00		
F. J. Coulter	45 00		
Elizabeth Cox	10 50		
P. H. Dardis	17 00		
John Doody	95 00		
Elliott & Duvey	78 00		
Austin Ford & Son . .	64 00		
Thos. McSorley . . .	48 00		
John F. Quinn	61 00		
Geo. M. Smith	33 00		
		532 50	
Vitrol, Cochrane Chemical Co.		15 79	
Total			78,687 13
Balance unexpended			$1,812 87

Health Department.

Appropriation		$17,500 00
EXPENDED.		
For Salaries of		
Medical Inspector, Dr. E. Farnham	$3,000 00	
Secretary, Jas. B. Soper .	1,200 00	
Clerk, B. E. Dunn . . .	732 48	
Sanitary Inspectors:		
Chas. A. Lincoln . . .	850 00	
John McCormick . . .	825 75	
Daniel W. Parker . .	785 00	
Amounts carried forward .	$7,393 23	$17,500 00

Health Department — Continued.

Amounts brought forward . .	$7,393 23		$17,500 00
For Salaries of Drivers of vans:—			
John A. Jackson . . .	730 46		
Richard M. O'Brien . .	720 20		
		$8,843 89	
Advertising:			
Cambridge Chronicle Co.	$8 22		
F. S. Hill	4 88		
		13 10	
Bacteriologist, Dr. G. B. Henshaw . .		968 00	
Board, Cambridge Hospital		1,879 60	
Burials, H. D. Litchfield		139 00	
Car tickets, W. E. Street Railway Co. .		450 00	
Cash advanced for postage, etc., Dr. E. Farnham		10 08	
Cash paid for burying dead animals . .		84 00	
Carriage hire, Whiting & Smith . . .		21 50	
Cash paid for clothes destroyed:—			
A. A. Cameron	$26 00		
Hannah Chadwick . . .	28 50		
Agnes B. Scally	37 75		
W. J. Taylor	173 00		
		265 25	
Clothing:—			
W. M. Townsend & Co. .	$15 00		
David Wilcox & Co. . .	5 00		
Zerega & Co.	3 25		
		23 25	
Directories:			
E. F. Hunt & Co. . . .	$3 00		
Sampson, Murdock & Co.	5 00		
		8 00	
Disinfecting, City of Boston		180 00	
Drugs and prescriptions:—			
Walter A. Claflin . . .	$161 15		
Wm. B. Hunt & Co. . .	9 29		
Geo. M. Olive	9 35		
Edw. Thorndike	1 00		
		180 79	
Amounts carried forward		$13,066 46	$17,500 00

Health Department — Continued.

Amounts brought forward		$13,066 46	$17,500 00
For Dry goods and bedding:—			
J. H. Corcoran & Co. . .	$39 60		
Chas. B. Wilbur	17 42		
		57 02	
Examining Titles, Wm. V. Thompson . .		23 00	
Expressage		3 15	
Furniture:—			
Library Bureau	$14 00		
Phillips Bros. & Co. . .	10 25		
		24 25	
Harness and repairs		12 85	
Horse board, Whiting & Smith		600 00	
Horse clipping		7 00	
Horse-shoeing, W. F. Garrett		54 00	
Making bags, Mrs. W. Arbuckle . . .		5 27	
Medical supplies and apparatus:—			
Geo. B. Henshaw, M.D. .	$92 92		
Melvin & Badger . . .	28 60		
F. C. Robinson	31 25		
Schlegel & Fottler . . .	3 00		
		155 77	
Nurses:—			
Boston Medical Library .	$8 00		
A. A. Cameron	91 00		
Hannah Chadwick . . .	92 00		
Agnes B. Scally	92 00		
W. J. Taylor	112 00		
		395 00	
Professional services:—			
Dr. David D. Brough . .	$95 00		
F. G. Cook	188 00		
Dr. Paul F. Ela	12 00		
Dr. G. B. Henshaw . .	12 00		
Dr. J. L. Hildreth . . .	45 00		
Dr. T. B. Shea	15 00		
		367 00	
Serving notices, Fred H. Seavey . . .		45 56	
Amounts carried forward		$14,816 33	$17,500 00

Health Department — Concluded.

Amounts brought forward		$14,816 33	$17,500 00
For School Inspectors:—			
Frank F. Carr, M.D. . .	$203 11		
Geo. A. Coburn " . .	142 38		
Geo. P. Cogswell " . .	134 00		
Jos. D. Couch " . .	98 95		
B. D. Davis " . .	114 12		
A. W. Dudley " . .	197 87		
W. A. Putnam " . .	197 87		
N. V. Shannon " . .	197 87		
		1,286 17	
Services as patrolmen:—			
Felix Desnoit	$20 00		
Jos. W. Parks	100 00		
		120 00	
Signs, W. H. Norris		6 30	
Stationery, printing, etc.:—			
Cambridge Chronicle Co. .	$74 04		
Cotton & Gould	68 20		
Jas. H. Cox	206 30		
Library Bureau	9 98		
Lombard & Caustic . .	19 52		
M. R. Warren Co. . . .	7 40		
E. W. Wheeler	36 75		
Sundry persons	11 54		
		433 73	
Sundry supplies:—			
Lewis P. Chandler . .	$16 35		
Lafayette Grocery Store .	3 57		
Sundry persons	18 87		
		38 79	
Telephone rent and tolls		180 00	
Tools, hardware, supplies:—			
Burditt & Bynner . . .	$29 76		
J. D. Ford	6 92		
Whittier Hardware Co. .	6 19		
J. R. Worthen	1 75		
		44 62	
Use of wagons, Chas. Waugh & Co. . .		48 41	
Wagon (exchange) Chas. Waugh & Co. .		85 00	
Total			17,059 35
Balance unexpended			$440 65

Inspection of Milk and Vinegar.

Appropriation			$1,600 00
	RECEIVED.		
For Milk and butterine licenses		$150 50	
	EXPENDED.		
For Salaries of			
Inspector, F. A. Dunbar	$900 00		
Deputy, J. F. Wheeler	409 00		
		$1,309 00	
Car tickets, W. E. Street Railway Co.		30 00	
Cash paid for samples, J. F. Wheeler		36 67	
Cash paid for sundries:—			
F. A. Dunbar	$11 80		
W. F. Smith	30		
		12 10	
Collecting samples, W. F. Smith		66 00	
Directory, W. A. Greenough & Co.		3 00	
Drugs, Walter A. Claflin		15 85	
Expressage:—			
American Express Co.	15		
Savage & Son	70		
		85	
Hardware, Brock & Eaton		3 16	
Stationery and printing:—			
Cambridge Chronicle Co.	$16 00		
James Cox	7 00		
James H. Cox	5 00		
Greenough, Adams & Cushing	4 00		
Lombard & Caustic	3 84		
Stationery Department	14 00		
		49 84	
Stenography, Emma F. Smith		3 25	
Thermometers, apparatus, etc., Franklin Educational Co.		54 18	
Total			$1,583 90
Balance unexpended			$16 10

Inspector of Provisions.

Appropriation			$800 00
EXPENDED.			
For Salary of Inspector of Provisions, C. E. Hadcock		$699 97	
Drugs, chemicals, etc:—			
A. R. Bayley & Co.	$4 60		
Walter A. Claflin	61 97		
A. Cunningham	2 50		
J. A. Holmes & Co.	3 15		
John C. Silvia	3 00		
Henry Thayer & Co.	21 00		
		$96 22	
Total			796 19
Balance unexpended			$3 81

Inspection of Wires.

Appropriation			$10,700 00
RECEIVED.			
For labor and materials		$200 41	
EXPENDED.			
For Salaries of Inspector of Wires, Charles F. Hopewell	$1,000 00		
Clerk, Lillian W. Hyde	314 00		
Assistants:—			
Francis Axtman	794 84		
Carroll Bennink	93 42		
George J. Blaisdell	1,205 84		
David J. Campbell	629 13		
Harold T. Dougherty	9 50		
P. L. Dougherty	107 16		
John W. Jefferson	24 00		
Arthur Jewell	410 66		
John Newcomb	30 00		
Wm. C. Pierce	1,022 34		
J. K. Scannell	64 00		
Thos. R. Shaw	935 34		
		6,640 73	
Amounts brought forward		$6,640 73	$10,700 00

nspection of Wires — Continued.

Amounts brought forward		$6,640 73	$10,700 00
For Apparatus, repairs, and electrical supplies:—			
Anchor Electric Co. . .	$25 29		
J. A. & W. Bird & Co. .	17 75		
Boston Woven Hose Co. .	10 53		
J. H. Bunnell & Co. . .	5 00		
Edes Mfg. Co.	200 52		
Electric Gas Lighting Co..	152 13		
George C. Goodwin & Co.	15 00		
Gray & Clark	27 66		
Holtzer Cabot Electric Co.	113 30		
C. S. Knowles	10 32		
Municipal Signal Co. . .	250 00		
Murdock & Taber . . .	55 00		
Chas. E. Perry & Co. . .	80 00		
Pettingell, Andrews Co. .	269 07		
Rawson & Morrison Mfg. Co.	8 25		
F. L. Sawyer & Co. . .	50 00		
Simplex Electric Co. . .	92 41		
Standard Brass Co. . .	18 57		
George M. Stevens . . .	25 25		
Taber & Mayer	14 37		
U. S. Fire & Police Tel. Co.	860 25		
Western Electric Co. . .	42 00		
Ziegler Electric Co.. . .	30 00		
Sundry persons	11 54		
		2,384 21	
Bag, Rich, Reed & Atwood		4 00	
Bedding, etc.:—			
J. H. Corcoran & Co. . .	$5 62		
Worcester Bros.	9 75		
		15 37	
Binding, J. H. H. McNamee		6 90	
Carpentry and mill work:—			
Ira G. Hersey	$104 77		
M. F. Tracy & Son . .	5 25		
		110 02	
Car tickets West End Street Railway Co.		75 00	
Amounts carried forward		$9,236 23	$10,700 00

Inspection of Wires — Continued.

Amounts brought forward		$9,236 23	$10,700 00
For Cash expended for stock and car fares, Francis Axtman		8 20	
Expressage, Hatch & Co.		22 65	
Hardware, tools and supplies:—			
Brock Brothers . . .	$8 31		
Burditt & Bynner . . .	63 18		
J. D. Jewett & Co. . .	52 29		
Frank A. Smith . . .	10 00		
A. J. Wilkinson & Co. .	14 26		
Geo. A. Wood	8 93		
		156 97	
Harness and repairs:—			
G. A. Morse	$15 25		
Wm. H. Roberts . . .	8 35		
Sundry persons	9 10		
		32 70	
Horse board:—			
Irving Blake	$304 17		
Fire department . . .	107 00		
		411 17	
Horse shoeing, Wm. Balmer		29 75	
Horse hire, Irving Blake		14 28	
Laying ducts, Franklin A. Snow . . .		62 00	
Labor and stock on whistle, A. H. Hews & Co.		93 98	
Lighting, Cambridge Electric Light Co.		87 13	
Labor and supplies		9 50	
Painting, John W. Jefferson		10 00	
Plumbing, E. W. Clark		59 66	
Stationery, printing, etc.:—			
Frost & Adams Co. . .	$6 00		
Lombard & Caustic . .	20 50		
Chas. E. Perry & Co. . .	15 28		
Stationery department .	6 41		
		48 19	
Sundries		27 59	
Telephone rents and tolls		225 97	
Amounts carried forward		$10,535 97	$10,700 00

Inspection of Wires — Concluded.

Amounts brought forward		$10,535 97	$10,700 00
For Wagon repairs:—			
Chapman Carriage Co. .	$90 20		
Dover Stamping Co.	18 68		
		108 88	
Washing, Fannie E. Blaisdell		55 13	
Total			$10,699 98
Balance unexpended			02

Interest.

Appropriation			$137,000 00
RECEIVED.			
For accrued interest on bonds sold . . .		$514 41	
Interest on Deposits		2,865 55	
Interest on Taxes		5,357 57	
		$8,737 53	
EXPENDED.			
For Interest on			
Contingent Loan		$8,000 00	
Daniel White Charity		300 00	
Dowse Institute Fund		600 00	
Funded Loan		118,710 00	
Sanders Temperance Fund		600 00	
Temporary Loans		6,186 40	
Total			134,396 40
Balance unexpended			$2,703 60

Lamp Department.

Appropriation			$70,000 00
EXPENDED.			
For Salaries of			
Supt. Chas. F. Hopewell .	$1,000 00		
Lamplighters	3,684 00		
		$4,684 00	
Amounts carried forward		$4,684 00	$70,000 00

Lamp Department — Continued.

Amounts brought forward		$4,684 00	$70,000 00
For Apparatus and electric supplies, Anchor Electric Co.		9 67	
Carriage repairs, Chas. Waugh & Co. . .		19 05	
Carriage hire:—			
C. H. Lake	$6 00		
James McGovern . . .	6 00		
H. L. Sanborn	97 50		
		109 50	
Car tickets, W. E. Street Railway Co. . .		25 00	
Enamel black, Robert W. Neff		14 30	
Fixtures, Welsbach Street Lighting Co. .		369 54	
Hardware and supplies:—			
Burditt & Bynner . . .	$8 24		
S. C. Higgins	9 27		
		17 51	
Horse, H. L. Sanborn		150 00	
Horse board:—			
Edwin A. Cutting . . .	$125 00		
F. E. Newgent & Co. . .	50 00		
H. L. Sanborn	35 26		
		210 26	
Horse-shoeing, Wm. Balmer		62 50	
Lamp chimneys, burners and founts, Norcross, Mellen & Co.		25 30	
Lighting streets:—			
Cambridge Electric Light Co.:—			
Arc	$49,225 01		
Incandescent	8,642 67		
Moving lamps	16 50		
Cambridge Gas Light Co. .	5,296 37		
Burners and repairs . .	52 20		
Town of Belmont . . .	60 00		
		63,292 75	
Oil:—			
Standard Oil Co. . . .	$104 10		
F. A. White	5 63		
		109 73	
Amounts carried forward		$69,099 11	$70,000 00

Lamp Department — Concluded.

Amounts brought forward		$69,099 11	$70,000 00
Repairing lanterns and torch, John W. Jefferson		15 00	
Painting posts, R. A. Sherwin		30 00	
Stationery, printing, T. W. Supplies: —			
Cotton & Gould	$6 57		
James H. Cox	5 25		
Lombard & Caustic . . .	7 13		
George H. Richter & Co. .	44 39		
Stationery Department .	10 85		
		74 19	
Stamps, Globe Stamp Co.		17 07	
Suppers, Mansion House		6 00	
Sundries		23 59	
Total			$69,264 96
Balance unexpended			$735 04

Land Damages.

Appropriation			$66,282 28
EXPENDED.			
For Boylston Street : —			
Appraising, R. Wentworth	$25 00		
Exam. Title, Wm. V. Thompson	70 00		
Land : —			
Heirs of Richard Beckett	1,300 00		
" " Martha P. Gregory	15,000 00		
Josephine A. Stearns .	402 50		
M. Josephine Whitman	20,000 00		
		$36,797 50	
Charles and Vine Streets : —			
Land: —			
Bridget Fahy	$2,600 00		
Hiram Greer	332 60		
James McCorkle . . .	209 00		
		3,141 60	
Amounts carried forward		$39,939 10	$66,282 28

Land Damages — Concluded.

Amount brought forward		$39,939 10	$66,282 28
Commercial Avenue: —			
Land, John M. Woods, *et al.*		2,000 00	
Eighth Street : —			
Appraising :—			
L. M. Hannum . . .	$75 00		
R. Wentworth	65 00		
Land:—			
Est. of Daniel Rindge .	2,539 20		
Robert Weitze . . .	2,500 00		
		5,179 20	
Eliot Street : —			
Land :—			
Sidney H. Buttrick, Tr.	$67 45		
Bertha E. Carlson . .	1,507 00		
Heirs of Rebecca Munroe	1,772 00		
		3,346 45	
For Inman Street:—			
Land, John J. Bright		225 00	
Magee Street:—			
Land:—			
Wm. R. Murdock . .	$433 55		
Heirs of John Murphy .	146 37		
		579 92	
Massachusetts Avenue:—			
Land, George Russell and Abel Fitch .		110 00	
Mt. Auburn Street:—			
Land, John C. Gray		1,200 00	
Total			52,579 67
Balance unexpended			$13,702 61

Law Department.

Appropriation			$5,200 00
RECEIVED.			
For Services of City Solicitor to Water Works		$2,100 00	
Amount carried forward			$5,200 00

Law Department—Concluded.

Amount brought forward			$5,200 00
EXPENDED.			
For Salary of City Solicitor, G. A. A. Pevey		3,500 00	
Atlas, G. W. Bromley & Co.		25 00	
Barge hire, John Nixon		8 00	
Book-case, Paine Furniture Co.		15 75	
Car tickets, West End St. Railway Co. .		205 00	
Cash expended, G. A. A. Pevey . . .		270 54	
Copies of manuscripts, Middlesex County Directory, Sampson, Murdock & Co. .		21 00	
		5 00	
Experts:—			
Wellington Fillmore . .	$20 00		
Wellington Fillmore & Co.	25 00		
John Mahady	50 00		
Arthur H. Nichols, M.D.	50 00		
		145 00	
Indexing, G. Herbert Lee		15 00	
Negatives, photographs:—			
D. W. Butterfield . . .	$24 00		
Garth's Studio	9 00		
		33 00	
Plaster work, Wm. J. Heron		7 85	
Professional services:—			
Dr. G. L. Walton . . .	$35 00		
Dr. R. Wetherbee . . .	25 00		
		60 00	
Services, Walter C. Wardwell		6 50	
Stationery, printing, T. W. supplies:—			
T. H. Ball	$77 30		
Thos. Groom & Co. . .	14 00		
T. H. Lane	4 25		
Office Specialty M'f'g Co.	90 00		
J. J. Shannon & Co. . .	7 65		
Stationery department .	77 69		
		270 89	
Typewriting, Geo. B. French		601 35	
Total			5,189 88
Balance unexpended			$10 12

Overseers of the Poor (Almshouse Department).

Appropriation	$20,500 00
Transferred from Outside Aid Department	350 00
	$20,850 00

RECEIVED.

For Barrels	$35 68	
Board	1,294 65	
Chair shopwork	3 60	
Grease and bones	80 45	
Rags	2 50	
Scale Book	1 00	
Use of telephone	1 80	
Weighing fees	15 90	
	$1,435 58	

EXPENDED.

For Salaries of			
Supt. M. L. Eldridge	$1,500 00		
Asst. Supt. S. F. Norris	782 14		
Sundry House Officials	4,493 06		
Organist, C. M. Walker	100 00		
		6,875 20	
Advertising :—			
Boston Herald Co.	7 88		
Cambridge Chronicle Co.	6 00		
		$13 88	
Board, Cambridge Hospital	$88 52		
Children's Hospital	12 00		
Somerville Hospital	94 00		
		194 52	
Boots, shoes and repairs :—			
E. D. Eldridge	$40 60		
Jordan, Marsh & Co.	16 50		
Mass. Boot and Shoe Co.	60 59		
P. H. Moriarty	5 75		
Wm. Myers	65 70		
John Quinn	25 83		
C. Henry Sherburne	6 50		
A. G. Swett & Co.	49 80		
		271 27	
Amounts carried forward		$7,354 87	$20,850 00

Overseers of the Poor (Almshouse Department) — Continued.

Amounts brought forward		$7,354 87	$20,850 00
For Burials, H. D. Litchfield		22 60	
Burial fees, Cemetery dept.		9 00	
Car tickets, W. E. St. Railway Co. . .		120 00	
Cash expended, M. L. Eldridge		341 94	
Carriage repairs :—			
Francis R. Henderson . .	$22 00		
George R. Henderson . .	12 50		
James A. Henderson & Son	14 25		
		48 75	
Clothing, bedding, etc.:—			
Brown, Durrell & Co. . .	$408 96		
Dyer, Rice & Co. . . .	31 25		
Fowle & Pearson . . .	10 00		
Jordan, Marsh & Co. . .	419 50		
T. H. Lane & Co. . . .	263 03		
L. Morse & Co.	109 58		
John O. Smith & Co. . .	80 75		
Whitten, Burdett & Co. .	60 00		
		1,383 07	
Disinfectants:—			
R. S. Downe & Co.. . .	$7 50		
Royal Cross Chemical & Odorless Cabinet Co. .	5 00		
		12 50	
Expressage, Bancroft's Express		25 25	
Fuel:—			
Baker, Hunnewell Co. . .	$244 54		
L. G. Burnham & Co. . .	1,280 20		
Weighing, H. W. Brooks .	13 25		
		1,537 99	
Furniture, furnishings and household supplies:—			
Greenwood & Co. . . .	$34 94		
W. G. Hallock	8 37		
D. W. Hyde & Co. . . .	24 04		
Jordan, Marsh & Co. . .	153 70		
John McVey	5 00		
Amounts carried forward . .	$226 05	$10,855 97	$20,850 00

Overseers of the Poor (Almshouse Department) — Continued.

Amounts brought forward . .	$226 05	$10,855 97	$20,850 00
For furniture, furnishings and household supplies:—			
John H. Pray Sons & Co.	187 77		
Prescott Bros.	7 00		
R. H. White & Co. . . .	16 56		
Worcester Bros.	12 30		
		449 68	
Gas, Cambridge Gas Light Co.		196 64	
Grain, Clark Bros.		10 38	
Hardware, tools and supplies:—			
Burditt & Bynner . . .	$74 59		
D. W. Gage	20 50		
F. A. White	10 37		
		105 46	
Heating apparatus repairs:—			
Wm. Campbell & Co. . .	46 08		
S. C. Higgins	96 03		
Walker & Pratt Mfg. Co. .	64 43		
		206 54	
House repairs:—			
Painting, papering, J. H. & J. P. Thayer & Co. .	$100 72		
Plastering, Clarence G. Reed	22 10		
Plumbing:—			
D. W. Gage	$41 58		
John H. Stevens & Co. .	56 42		
Roof repairs, David Young	66 65		
Watch and clock repairs, Hersey Mfg. Co. . . .	25 45		
		312 92	
Horse-shoeing, Gerry & Rufer		6 00	
Ice, Cambridge Ice Co.		57 32	
Labor:—			
Michael Martin	$109 74		
James Prendable . . .	36 00		
		145 74	
Lantern and gas-fitting repairs, George F. Dickson		10 75	
Amounts carried forward		$12,357 40	$20,850 00

Overseers of the Poor (Almshouse Department) — Continued.

Amounts brought forward		$12,357 40	$20,850 00
For Lumber, lime:—			
Geo. W. Gale Lumber Co.	$38 75		
F. L. Sawyer & Co. . .	22 92		
Wm. H. Wood & Co. .	7 40		
		69 07	
Matches, J. A. Holmes & Co.		9 15	
Medicines, drugs:—			
J. F. Fuller & Co. . .	$10 00		
Gilman Brothers . . .	88 33		
Elie H. LaPierre . . .	228 98		
		327 31	
Medical instruments and surgical apparatus:—			
C. H. Goldthwaite & Co. .	$7 75		
W. H. Phelps & Co. . .	6 00		
		13 75	
Newspapers:—			
F. S. Hill	$7 50		
J. W. Hunnewell . . .	36 00		
		43 50	
Nurse, Ella B. Pool		19 28	
Oil, paints, etc.:—			
Wood Brothers	$151 03		
W. A. Wood & Co. . .	9 04		
		160 07	
Pipe, fittings, Walworth Mfg. Co. . . .		45 81	
Professional services:—			
Paul F. Ela	$9 00		
J. L. Hildreth	5 00		
		14 00	
Rubber goods, tubing, etc., C. S. Knowles		30 40	
Savogran, India Alkali Works		17 10	
Soap, Chas. R. Teele		201 87	
Scale, The Fairbanks Co.		12 00	
Stationery, F. W. Barry, Beale & Co. .		14 15	
Subsistence supplies:—			
Armour & Co.	$187 50		
Boyd, Leeds & Co. . .	820 32		
Cambridge Baking Co. .	59 52		
Cheney, Upham & Co. .	47 80		
Geo. H. Chessman & Co.	20 50		
Clark Bros.	85 75		
Amounts carried forward .	$1,221 39	$13,334 86	$20,850 00

Overseers of the Poor (Almshouse Department) — Concluded.

Amounts brought forward .	$1,221 39	$13,334 86	$20,850 00
For Subsistence supplies:—			
George Close	24 26		
Cobb, Bates & Yerxa .	108 82		
J. P. Dailey	30 00		
Chas. L. Davenport . .	21 45		
L. M. Dolloff	865 37		
R. S. Edwards & Co. .	360 00		
David Ellis & Co. . . .	292 16		
Hathaway & Gould . .	32 02		
J. A. Hathaway & Co. .	808 06		
J. A. Holmes & Co. . .	35 20		
Lyman L. Kimball & Co.	51 50		
A. J. Littlefield & Co. .	475 26		
Isaac Locke & Co. . .	5 40		
A. J. Lovell & Co. . .	96 02		
McPherson Bros. . . .	37 95		
Chas. E. Moody & Co. .	18 00		
N. Y. Biscuit Co. . . .	55 78		
Fred D. Norton	356 68		
Oakdale Mfg. Co. . . .	225 00		
George G. Parker . . .	32 52		
George M. Parker . . .	8 28		
A. G. Patch & Co. . . .	148 65		
A. L. Proctor	8 20		
Public Market & Packing Co	901 07		
F. Putnam & Co. . . .	333 88		
Geo. E. Richardson & Co. .	16 70		
Sands, Taylor & Wood .	196 00		
Small & Jones	184 02		
Howard W. Spur & Co. .	266 30		
Swan, Newton & Co. . .	115 07		
L. A. Treat	12 64		
Utley & Rogers	5 04		
		7,348 69	
Sundries		44 95	
Telephone rent and tolls		82 00	
Toys, games, etc., B. H. Landman . . .		5 93	
Total			20,816 43
Balance unexpended			$33 57

Overseers of the Poor (Farm and Ledge).

Appropriation			$11,500 00
Transferred from Outside Aid department			550 00
			$12,050 00
RECEIVED.			
For Farm Produce		$5,346 60	
Stone		10,337 03	
		$15,683 63	
EXPENDED.			
Farm Department.			
For Labor on Farm :—			
Farmer, James Welch	$785 00		
Marketman, John Moynahan	405 00		
Employees	2,653 83		
		3,843 83	
Cows, Cornelius Mulcahy		50 00	
Glass, Boston Plate Glass and Window Co.		8 19	
Hay, Grain :—			
Clark Bros.	$359 34		
S. C. Frost	33 65		
George G. Wright	68 39		
		461 38	
Hose, C. S. Knowles		12 00	
Labor :—			
Wm. Juhlman	27 00		
John Kenney	120 00		
		147 00	
Lumber, George W. Gale Lumber Co.		93 62	
Manure :—			
Elizabeth Cox	$17 26		
E. Fredrekson	23 35		
S. Gustafson	12 40		
Elizabeth Martell	13 06		
Jeremiah McCrehan	17 54		
Eugene Moynahan	16 90		
Cornelius Mulcahy	8 41		
Thos. O'Hara	13 12		
David O'Mara	38 30		
Amounts carried forward	$160 34	$4,616 02	$12,050 00

Overseers of the Poor (Farm and Ledge) — Continued.

Amounts brought forward . . .	$160 34	$4,616 02	$12,050 00
For Manure:—			
Michael O'Sullivan . . .	7 81		
John Quinn	17 06		
B. F. St. George . . .	18 37		
J. F. Sullivan	16 47		
John Weitar	9 62		
		229 67	
Market expenses, M. L. Eldridge . . .		9 25	
Pigs:—			
George W. Gilman . . .	$55 00		
D. L. Tappan	36 00		
		91 00	
Plants and seeds:—			
Jos. Breck & Sons . . .	$6 95		
Schlegel & Fottler . . .	96 54		
		103 49	
Pullets, M. L. Eldridge (pd. Alden Coggan $30)		30 65	
Rent of Market Stand, Mercantile Wharf Corporation		40 00	
Sundries		38 58	
Tools and repairs, Jos. Breck & Sons . .		7 40	
Farm total		$5,166 06	
Ledge Department.			
For Labor on Ledge:—			
Foreman, Michael Callahan .	$785 56		
Employees	4,024 42		
Running steam drill, Thomas Robertson	544 50		
		5,354 48	
Cash expended for labor, M. L. Eldridge		16 00	
Fuel, Baker, Hunnewell Co.		127 00	
Lumber, George W. Gale Lumber Co. .		55 72	
Oil, Kimball, Freed & Co.		31 80	
Pipe and fittings, Walworth Mfg. Co. . .		35 60	
Powder:—			
Hecla Powder Co. . . .	$160 25		
George H. Sampson . .	334 56		
		494 81	
Amounts carried forward		$6,115 41	$12,050 00

Overseers of the Poor (Farm and Ledge)—Concluded.

Amounts brought forward		$6,115 41	$12,050 00
Steam drill, George H. Sampson . . .		590 00	
Stationery, F. W. Barry, Beale & Co. .		5 00	
Teaming, Cornelius Mulcahy		13 50	
Tools and repairs:—			
R. H. Clark	$40 60		
Dean Steam Pump Co. .	5 55		
Dodge, Haley & Co. . .	55 21		
W. A. Easter	57 00		
		158 36	
Ledge total		$6,882 27	
Total			12,048 33
Balance unexpended			$1 67

Overseers of the Poor (House Offal Department).

Appropriation			$26,000 00
RECEIVED.			
For Sale of house offal		$7,228 79	
EXPENDED.			
For Labor as per pay-rolls		$21,389 25	
Covers, Sartwell, Heinhold & Humphrey.		34 56	
Currycombs, Wm. E. Randall		5 00	
Disinfectants, Dinsmore & Baker . . .		10 00	
Hardware, Dodge, Haley & Co. . . .		15 62	
Harness, repairs, etc.—			
Dyer, Rice & Co. . . .	$12 35		
Jos. A. Ryan	129 50		
		141 85	
Hay, grain and straw:—			
Otis S. Brown & Co. . .	$490 00		
Clark Bros.	656 06		
C. F. & G. W. Eddy . .	224 08		
A. Fitch & Co.	309 14		
Leavitt, Sanborn & Co. .	174 40		
Lord & Webster . . .	316 05		
E. R. Luke & Co. . . .	91 10		
George G. Wright. . .	620 15		
		2,880 98	
Amounts carried forward		$24,477 26	$26,000 00

Overseers of the Poor (House Offal Department) — Concluded.

Amounts brought forward		$24,477 26	$26,000 00
Horse, Welch & Hall		120 00	
Horse shoeing:—			
Wm. Bell	$332 25		
Gerry & Rufer	6 00		
John McMahon & Co.	195 72		
		533 97	
Labor, Hugh Toomey		120 00	
Lumber:—			
John S. Clary	$60 90		
Geo. W. Gale Lumber Co.	161 75		
		222 65	
Oil, dressing, etc., John H. Fuller		48 58	
Paint, etc., Wood Bros.		24 70	
Professional services, W. H. Way		3 00	
Sundries, M. L. Eldridge		8 00	
Wagon repairs:—			
Breslin & Lohnes	$270 95		
W. A. Easter	23 55		
J. E. Fitzgerald	80 65		
Jas. A. Henderson & Son.	48 60		
		423 75	
Total			25,981 91
Balance unexpended			$18 09

Outside Aid Department.

Appropriation		$49,500 00
Transferred to Almshouse Department	$350 00	
Transferred to Farm and Ledge	550 00	
		900 00
		$48,600 00

RECEIVED.

For Aid to, board and burial of sundry paupers	$5,144 79	
Amount carried forward		$48,600 00

Outside Aid Department — Continued.

Amount brought forward			$48,600 00
	EXPENDED.		
For Salaries of			
Secretary, D. P. Muzzey .	$1,500 00		
Visitor, V. Danforth . .	1,000 00		
Driver, John Moynahan .	140 00		
Clerk, Addie M. Benson .	550 00		
		3,190 00	
Aid to sundry persons		3,587 13	
By Cities and Towns:—			
City of Beverly . . .	$20 00		
Boston	1,439 42		
Everett	100 50		
Haverhill	117 29		
Lawrence	45 72		
Malden	276 46		
Quincy	36 00		
Somerville	238 59		
Waltham	43 71		
Woburn	34 62		
Worcester	113 39		
Town of Brookline . .	30 45		
Cohasset	289 80		
Danvers	239 00		
Georgetown . . .	10 00		
Hudson	42 00		
Middleboro	10 00		
Orleans	13 32		
Peabody	50 00		
Raynham	66 55		
		3,216 82	
Ambulance fees:—			
Charles W. Dailey . . .	$9 00		
Police Department . . .	147 00		
		156 00	
Binding:—			
E. W. Bettinson	6 00		
J. H. H. McNamee . . .	124 70		
		130 70	
Amounts carried forward		$10,280 65	$48,600 00

Outside Aid Department—Continued.

Amounts brought forward		$10,280 65	$48,600 00
For Board and care at			
Boston Children's Aid Society	$930 80		
Cambridge Hospital . .	1,183 90		
Carney Hospital	424 52		
Clarke School for the Deaf	11 97		
Danvers Lunatic Hospital	1,072 02		
Essex Co. Truant School .	132 00		
Mrs. M. A. French's . .	146 00		
Hospital Cottages for Children	230 27		
Mass. Hospital for Dipsomaniacs	674 11		
Mass. School for Feeble Minded	1,525 14		
Medfield Insane Asylum .	4,808 05		
Mrs. V. B. Moody's . .	146 00		
Northampton Lunatic Hospital	169 46		
Mrs. Moses Pepper's . .	44 00		
Perkins Institution . . .	34 97		
Mrs. George H. Sweet's .	169 46		
Taunton Lunatic Hospital	263 70		
Westboro' Insane Hospital	2,550 01		
Worcester Insane Asylum .	2,707 41		
Worcester Lunatic Hospital	7,138 62		
	———	24,362 41	
By Commonwealth of Massachusetts:—			
At Danvers Lunatic Hospital	$22 29		
Hospital for Dipsomaniacs	165 28		
Mass. School for Feeble Minded	42 71		
State Almshouse . . .	248 29		
State Almshouse (Insane)	1,342 40		
State Farm (Insane) .	1,113 20		
Amounts carried forward . .	$2,934 17	$34,643 06	$48,600 00

Outside Aid Department — Continued.

Amounts brought forward .	$2,934 17	$34,643 06	$48,600 00
For Board and care:—			
By Commonwealth of Massachusetts:—			
Taunton Lunatic Hospital	44 11		
Westboro' Insane Hospital	99 82		
Worcester Lunatic Hospital	1,410 99		
		4,489 09	
Boots and shoes, E. T. Fogg		41 25	
Burial fee, Cemetery Department . . .		202 00	
Burials:—			
John J. Dooley	$10 00		
H. D. Litchfield	196 15		
		206 15	
Carriage hire:—			
M. J. Fairbanks	$6 00		
Whiting & Smith . . .	60 00		
		66 00	
Car tickets, W. E. St. Railway Co. . .		300 00	
Carpentry, W. H. Norris		68 22	
Cash expended:—			
Traveling and transportation:—			
Wm. A. Bradford . .	42 70		
Wm. W. Burrage . .	17 00		
V. Danforth	95 70		
Alexander Millan . .	24 50		
D. P. Muzzey (sundries)	27 46		
		207 36	
Directories:—			
W. A. Greenough & Co. .	$92 00		
Sampson, Murdoch & Co.	5 00		
		97 00	
Fuel:—			
Baker, Hunnewell Co. .	$283 95		
L. G. Burnham & Co. .	1,333 65		
		1,617 60	
Amounts carried forward		$41,937 73	$48,600 00

Outside Aid Department — Continued.

Amounts brought forward		$41,937 73	$48,600 00
For Gas fittings, George F. Dickson . . .		5 88	
Labor, Thos. E. McNamara		32 00	
Lighting:—			
Cambridge Elec. Light Co.	$11 46		
Cambridge Gas Light Co.	40 47		
		51 93	
Medicines and drugs:—			
C. E. Coombs	$10 53		
Gilman Bros.	45 20		
E. C. Gove	17 24		
Elie H. La Pierre . . .	190 33		
Reeves Bros.	7 43		
Arthur B. Reycroft . . .	23 28		
L. W. Reycroft	36 10		
		330 11	
Medical instruments, surgical apparatus, W. H. Phelps & Co.		22 00	
Nurse, Celia Keyes		14 00	
Paper, etc., Wm. H. Claflin		28 26	
Painting, etc., Geo. H. Hughes		10 75	
Professional services, Paul F. Ela, M.D.		177 00	
Rebate for payment on burial, Jabez A. Sawyer, Admr.		11 15	
Repairing furniture, Jas. Grant & Co. . .		19 38	
Stamps, L. W. Poole		6 75	
Stationery and printing:—			
F. W. Barry, Beale & Co.	$83 00		
Blackbird Pen Co. . . .	6 25		
Cotton & Gould	40 20		
John H. Ford	209 61		
E. P. Gerould & Co. . .	6 00		
Library Bureau	14 54		
Lombard & Caustic . . .	64 47		
		424 07	
Subsistence supplies:—			
Theodore E. Blake . . .	$15 00		
Clark Bros.	42 90		
Cobb, Bates & Yerxa . .	98 55		
Daniel H. Dean	126 00		
Amounts carried forward . .	$282 45	$43,071 01	$48,600 00

Outside Aid Department — Concluded.

Amounts brought forward . .	$282 45	$43,071 01	$48,600 00
For Subsistence supplies:—			
R. S. Edwards & Co. . .	183 37		
J. A. Holmes & Co. . .	941 42		
H. N. Hovey & Co. . .	368 00		
McPherson Bros. . . .	414 99		
Sands, Taylor & Wood .	444 75		
		2,634 98	
Sundries		82 54	
Table, Glidden Supply Co.		75 00	
Telephone, rent and tolls		150 85	
Weighing, H. W. Brooks		12 75	
Total			46,027 13
Balance unexpended			$2,572 87

Salary of City Physician.

Appropriation		$1,500 00
EXPENDED.		
For salary of City Physician, Dr. L. L. Bryant	$1,500 00	
Total		$1,500 00

Park Department (Construction).

Appropriation		$82,246 19
Additional appropriation		125,000 00
		$207,246 19
RECEIVED.		
For Filling	$1,360 91	
Lumber	5 00	
Rent	2,020 45	
Stone dust	20 10	
	$3,406 46	
Amount carried forward		$207,246 19

Park Department (Construction) — Continued.

Amoun brought forward			$207,246 19

EXPENDED.

For Cambridge Field:—			
Canopy tent, Irving W. Wheeler & Co. .		$157 00	
Carpentry, W. Fillmore & Co.		361 47	
Cash for sundries, H. E. Whiting . . .		7 00	
Filling as per pay-roll		497 80	
Grate, Chelmsford Foundry Co. . . .		27 98	
Hardware, tools and supplies:—			
Ames Plow Co. . . .	$34 92		
Burdett & Bymer . . .	55 07		
Henry W. Goodwin . .	23 00		
Ralph P. Hoagland . .	36 35		
Sundry persons	1 75		
		151 09	
Hose, Boston Woven Hose Co.		105 50	
Lamps, F. E. Huntress & Co.		52 50	
Lumber, Geo. W. Gale Lumber Co. . .		130 05	
Park betterments, rebate of assessments:—			
Arthur Binney	$135 75		
James A. Binney . . .	177 39		
		313 14	
Paving, H. Gore & Co.		5 24	
Pay-rolls:—			
Laborers	$4,716 41		
Engineers	59 00		
		4,775 41	
Plants, trees:—			
Peter McPhee	$28 90		
F. R. Pierson Co. . . .	17 25		
Shady Hill Nurseries . .	175 50		
T. R. Watson	14 11		
		235 76	
Sharpening tools, etc.:—			
Mark Alexander . . .	$7 95		
James Maitland	15 23		
		23 18	
Stakes, John Quin		98 00	
Amounts carried forward		$6,941 12	$207,246 19

Park Department (Construction) — Continued.

Amounts brought forward		$6,941 12	$207,246 19
Stone:—			
Austin Ford & Son	$5 00		
Mass. Broken Stone Co.	335 06		
		340 06	
Sundries		12 13	
Teaming, sundry persons		281 00	
Telephone rent and tolls		61 15	
Water supply pipe and hydrant, Water Works Department		35 85	
Total expenses, Cambridge Field		$7,671 31	
For the Esplanade:—			
Advertising:—			
Boston Herald Co.	$12 25		
Cambridge Chronicle Co.	1 90		
F. S. Hill	2 00		
		16 15	
Examination of title, Wm. V. Thompson		28 00	
Filling, as per pay-roll		284 76	
Lumber, E. D. Sawyer & Co.		23 62	
Pay-roll:—			
Engineers	$978 78		
Laborers	152 00		
		1,130 78	
Repairing row-boat, G. Farrell		8 50	
Sea-wall, Thos. A. Rowe		52,883 25	
Sundries		7 05	
Typewriting, Geo. B. French		36 35	
Total expenses, the Esplanade		$54,418 46	
For the Front:—			
Dredging, N. E. Dredging Co.		$300 00	
Filling, as per pay-roll		2,629 35	
Fuel, Coleman Bros.		9 00	
Oil, Standard Oil Co.		5 33	
Pay-roll:—			
Engineers	$38 17		
Laborers	3,364 94		
		3,403 11	
Amounts carried forward		$6,346 79	$207,246 19

Park Department (Construction) — Continued.

Amounts brought forward		$6,346 79	$207,246 19
For Printing, John H. Ford		9 00	
Sign, John H. Lamson		3 50	
Stone ballast, Hugh Farrell		970 47	
Sundries		3 67	
Teaming		337 83	
Total expenses, The Front		$7,671 26	
For General account:—			
Salaries of			
General Supt. of Parks,			
Geo. R. Cook	$41 66		
Howard E. Whiting . .	1,359 00		
		1,400 66	
Barge hire, John Nixon		28 00	
Carriage hire:—			
C. H. Lake	$6 00		
Whiting & Smith . . .	37 00		
		43 00	
Carriage repairs, Chas. Waugh & Co. .		40 35	
Car tickets W. E. Street Railway Co. . .		250 00	
Cash expended, H. E. Whiting		8 54	
Dinners, etc.:—			
Colonial Club	$60 05		
M. R. Jones	63 00		
		123 05	
Expressage		3 55	
Filling, as per pay-roll		210 56	
Hardware, tools and repairs, and supplies:—			
Ames Plow Co. . . .	$113 22		
C. L. Bradlee	3 85		
Burditt & Bynner . . .	76 95		
J. D. Jewett & Co. . .	19 00		
James Maitland . . .	9 20		
F. A. White	30 00		
		252 22	
Hardwood ashes, F. R. Lalor		129 50	
Harness repairs		4 55	
Horse board, Whiting & Smith		300 00	
Horse clipping		6 00	
Amounts carried forward		$2,799 98	$207,246 19

Park Department (Construction)—Continued.

Amounts brought forward		$2,799 98	$207,246 19
For Horse shoeing, G. W. Lowd		47 25	
Landscape Architects:—			
Olmsted, Olmsted & Eliot	$310 09		
F. L. & J. C. Olmsted .	344 73		
		654 82	
Lumber, E. D. Sawyer & Co.		11 74	
Plans and views, Heliotype Printing Co.		45 00	
Plants, R. & J. Farquhar & Co. . . .		8 90	
Printing:—			
Cambridge Chronicle Co.,	$14 55		
John H. Ford	111 15		
		125 70	
Rent, The Prospect Union		120 00	
Rubber boots:—			
Cable Rubber Co. . . .	$61 28		
W. T. Roop & Co. . .	4 00		
		65 28	
Stakes:—			
W. Fillmore & Co. . .	$110 44		
John Quinn	91 50		
		201 94	
Sundries		1 56	
Transit, Cambridge Water Works . . .		150 00	
Transit cleaned and adjusted, Buff & Berger		7 80	
Total expenses, General Account		4,239 97	
For Nursery:—			
Trees:—			
Bay State Nurseries . .	$87 59		
Stephen Crane	50 00		
Total expenses, Nursery		$137 59	
For Office expenses:—			
Salaries of Clerks:—			
Grace E. Hixon	$298 00		
E. A. McGinnis	304 00		
John R. Wilson	785 00		
		1,387 00	
Amounts carried forward		$1,387 00	$207,246 19

Park Department (Construction) — Continued.

Amounts brought forward		$1,387 00	$207,246 19
For Office expenses:—			
Carpentry, C. S. Newcomb		5 65	
Cash expended, H. E. Whiting		2 72	
Directory, E. F. Hunt & Co.		3 00	
Expressage		1 25	
Stationery, printing:—			
F. L. Beunke	$11 15		
Cambridge Chronicle Co.	21 00		
Cotton & Gould	45 66		
John H. Ford	6 75		
Stationery department	50 55		
Louis F. Weston	5 00		
Sundry persons	1 50		
		141 61	
Subscription, Garden and Forest		4 00	
Telephone rent and tolls		181 15	
Typewriter repairs, Smith-Premier Typewriter Co.		7 85	
Total expenses, Office		$1,734 23	
For Rindge Field:—			
Labor, as per pay-rolls		$243 00	
Total expenses, Rindge Field		$243 00	
For River Parkway:—			
Advertising:—			
Boston Herald Co.	$6 38		
Cambridge Chronicle Co.	6 25		
James Cox	2 00		
F. S. Hill	1 75		
		16 38	
Architect's services, Herbert F. Miller		1,125 00	
Base and grate, Concord Foundry Co.		94 50	
Bricks, D. W. De Rosay		137 75	
Bulkhead, J. N. Hayes & Co.		2,741 63	
Cement, Waldo Bros.		61 60	
Dredging, Bay State Dredging Co.		1,371 10	
Examination of Titles, Wm. V. Thompson		35 00	
Amounts carried forward		$5,582 96	$207,246 19

Park Department (Construction) — Continued.

Amounts brought forward		$5,582 96	$207,246 19
For Fences:—			
W. Fillmore & Co. . . .	$42 00		
A. Simpson	748 82		
		790 82	
Filling, etc.:—			
Bay State Dredging Co. .	$7,571 74		
Eastern Dredging Co. . .	7,716 01		
Sundry persons, as per pay-roll	21,139 43		
		36,427 18	
Freight:—			
Boston & Maine R. R. Co.	$2 40		
Fitchburg R. R. Co. . .	36 00		
		38 40	
Fuel, Coleman Bros.		13 50	
Granite and cutting, Alexander Wight .		5 00	
Hardware, tools and repairs, supplies etc.:—			
Ames Plow Co.	128 00		
Barbour, Stockwell Co. .	26 00		
Burditt & Bynner . . .	20 23		
Daniel J. Sullivan . . .	10 60		
Sundry persons	4 58		
		189 41	
Land:—			
Sarah G. Bancroft . . .	$2,000 00		
Jennie G. Carter *et al.* .	750 00		
Dover Stamping Co. . .	2,240 89		
Geo. H. Rugg	8,403 33		
		13,394 22	
Lawn grass, R. & J. Farquhar & Co. .		56 95	
Lumber:—			
J. H. Keenan & Co. . .	$5 10		
E. D. Sawyer & Co. . .	26 43		
Wm. H. Wood & Co. . .	116 08		
		147 61	
Moving boat house, etc., J. N. Hayes & Co.		236 00	
Painting boat house, John Quin . . .		118 00	
Paving, H. Gore & Co.		212 73	
Amounts carried forward		$57,212 78	$207,246 19

Park Department (Construction) — Continued.

Amounts brought forward		$57,212 78	$207,246 19
Pay-roll:—			
Engineers	$2,497 90		
Laborers	16,814 21		
		19,312 11	
Piles, John T. Scully		326 34	
Pipe, D. W. Lewis		47 95	
Plants, trees, etc.:—			
Bay State Nurseries	$172 65		
R. & J. Farquhar & Co.	30 50		
Edw. Gillett	85 08		
Peter McPhee	203 10		
Samuel C. Moon	75 00		
Shady Hill Nursery Co.	137 98		
		704 31	
Printing, Cambridge Chronicle Co.		30 91	
Sea-wall, Thomas A. Rowe		900 00	
Services, Frederick H. Viaux		400 00	
Sign boards, C. S. Newcomb		24 00	
Stakes, W. Fillmore & Co.		110 00	
Stone (Edge), Chas. McMahon		585 97	
Sundries		5 35	
Teaming, sundry persons		1,378 10	
Use of Engine, Geo. E. Worthen		70 00	
Water Supply, Water Works Dept.		507 69	
Total expenses, River Parkway		$81,615 51	
For Winthrop Square:—			
Bricks, Ham & Carter		$106 25	
Filling, as per pay-roll		623 31	
Lawn seats, Ames Plow Co.		93 75	
Paving, H. Gore & Co.		47 25	
Pay-roll:—			
Engineers	$17 10		
Laborers	614 34		
		631 44	
Plants, trees:—			
Edw. Gillett	$9 48		
Peter McPhee	43 25		
Shady Hill Nurseries	13 70		
		66 43	
Amounts carried forward		$1,568 43	$207,246 19

Park Department (Construction) — Concluded.

Amounts brought forward	$1,568 43	$207,246 19
For Stone (edge), Chas. McMahon . . .	14 50	
Stone work, Alex. Wight	75	
Teaming, sundry persons	144 00	
Water supply, Water Works Department	25 19	
Total expenses, Winthrop Square	$1.752 87	

SUMMARY: EXPENDED.

For Cambridge Field	$7,671 31	
The Esplanade	54,418 46	
The Front	7,671 26	
General Account	4,239 97	
The Nursery	137 59	
Office Expenses	1,734 23	
Rindge Field	243 00	
River Parkway	81,615 51	
Winthrop Square	1,752 87	
Total		159,484 20
Balance unexpended		$47,761 99

Park Department (Maintenance).

Appropriation		$12,000 00

RECEIVED.

For Clothes	$17 00	
Labor	56 67	
Shrubs	1 50	
	$75 17	

EXPENDED.

For Broadway Park:—		
Labor, as per pay-roll	$52 13	
Total, Broadway Park	52 13	
For Cambridge Field:—		
Supt. A. B. Griggs . . .	$495 00	
Janitors:—		
Abner F. Davis	156 00	
Geo. J. Weber	172 00	
Amounts carried forward . .	$823 00	$12,000 00

Park Department (Maintenance) — Continued.

Amounts brought forward . .	$823 00		$12,000 00
For Matron, Mrs. E. Reardon .	278 33		
Labor, as per pay-roll . .	2 00		
		$1,103 33	
Awnings, Irving W. Wheeler & Co. . .		16 00	
Carpentry, W. Fillmore & Co.		25 02	
Hardware, tools and supplies:—			
Ames Plow Co.	$6 50		
Burditt & Bynner . . .	8 20		
J. D. Jewett & Co. . .	22 95		
		37 65	
Lamps and fixtures:—			
C. H. McKenney & Co. .	$5 85		
Sundry persons	5 43		
		11 28	
Laundry work, E & R Laundry		9 34	
Lighting, Cambridge Elec. Light Co. . .		104 46	
Reel for hose, Chas. Waugh & Co. . . .		20 00	
Rent, N. E. Telephone Co.		25 50	
Soap, J. A. Holmes & Co.		16 10	
Sprinkler, J. B. Fellows & Co.		15 00	
Suits, Oak Hall Clothing Co.		57 75	
Sundries		24 67	
Work on flag-staffs, David Cass		9 50	
Total, Cambridge Field		$1,475 60	
For Commons and Squares:—			
Ensigns, I. W. Wheeler & Co.		$33 60	
Hardware, supplies, etc.:—			
Burditt & Bynner . . .	$16 00		
Ralph P. Hoagland . . .	5 99		
Sundry persons	7 60		
		29 59	
Lumber, E. D. Sawyer & Co.		11 74	
Pay-roll, laborers		4,385 81	
Plants:—			
Edw. Gillett	$83 65		
P. O'Brien & Son . . .	100 00		
T. R. Watson	212 37		
		396 02	
Amounts carried forward		$4,856 76	$12,000 00

Park Department (Maintenance) —Continued.

Amounts brought forward		$4,856 76	$12,000 00
For Printing, Cambridge Chronicle Co. . .		20 00	
Repairing seats, W. Fillmore & Co. . .		61 00	
Signs, Lamson Sign Co.		20 00	
Teaming, sundry persons		83 25	
Water supply, Water Works Department		4 29	
Wheels for hose reel, Chas. Waugh & Co.		4 85	
Work on flag-staffs, David Cass		43 74	
Total, Commons and Squares		$5,093 89	
For General Account:—			
Bulbs, R. & J. Farquhar & Co.		$101 75	
Bunting, Jas. Martin & Son		2 40	
Expressage, Hatch & Co.		15	
Freight, Fitchburg R. R. Co.		80 50	
Hardware, tools, supplies:—			
Ames Plow Co.	9 84		
Burditt & Bynner . . .	3 50		
		13 34	
Harness repairs, Hugh McCaffrey . . .		3 90	
Horse board, Street Department		130 00	
Horse-shoeing, G. W. Lowd		7 50	
Printing, Cambridge Chronicle Co. . . .		6 00	
Repairing flags, F. E. Blaisdell		4 00	
Tire for bicycle, Boston Woven Hose Co.		3 25	
Total General Account		$352 79	
For Public Grounds:—			
Filling, as per pay-roll		$254 30	
Loam, Jeremiah Sullivan		14 96	
Pay-roll:—			
Engineers	$52 05		
Laborers	255 79		
		307 84	
Plants, Jacob W. Manning		45 10	
Teaming, Thos. O'Hara		83 25	
Total, Public Grounds		$705 45	
Amount carried forward			$12,000 00

Park Department (Maintenance) — Concluded.

Amount brought forward			$12,000 00
For Rindge Field:—			
Labor, as per pay-rolls		$738 72	
Repairing seats, W. Fillmore & Co.		40 00	
Water supply, Water Works Department		5 79	
Total, Rindge Field		$784 51	
For Shade Trees:—			
Fence, Chelmsford Foundry Co.		$75 00	
Hardware, tools and supplies:—			
Ames Plow Co.	$235 00		
Burditt & Bynner	61 24		
		296 24	
Horse-shoeing, G. W. Lowd		10 50	
Ladder, C. W. H. Moulton & Co.		5 00	
Loam, Thos. O'Hara		64 80	
Netting, Jos. Breck & Sons		283 73	
Pay-roll:—			
Engineers	$22 75		
Laborers	2,641 18		
		2,663 93	
Printing, Cambridge Chronicle Co.		9 25	
Repairing tools, Daniel J. Sullivan		7 70	
Sundries		5 55	
Teaming, sundry persons		113 63	
Total, Shade Trees		$3,535 33	

SUMMARY: EXPENDED.

For Broadway Park	$52 13	
Cambridge Field	1,475 60	
Commons and squares	5,093 89	
General Account	352 79	
Public Grounds	705 45	
Rindge Field	784 51	
Shade trees	3,535 33	
Total		11,999 70
Balance unexpended		$ 30

Park Department (Maintenance, Interest).

Appropriation		$28,000 00
RECEIVED.		
For accrued interest on loan	$223 60	
EXPENDED.		
For Coupons	$17,100 00	
Registered	10,700 00	
Total		27,800 00
Balance unexpended		$200 00

Park Department (Maintenance, Sinking Fund).

Appropriation		$12,500 00
EXPENDED.		
For Amount required by City Ordinance for payment of park debt		$12,500 00

Plumbers' Examiners' Department.

Appropriation		$120 00
RECEIVED.		
For Licenses	$72 00	
EXPENDED.		
For Clerical services, Helen M. Griffin	15 00	
Examinations, John Crawford	95 00	
Fuel, solder, etc., John Crawford	6 40	
Total		116 40
Balance unexpended		$3 60

Police Department.

Appropriation	$113,000 00
Transferred from Contingent Fund	550 42
	$113,550 42

RECEIVED.

For Ambulance fees	$165 00	
Cloth for uniforms	454 86	
Court fees, Third District Court	4,232 04	
Fines, House of Correction	2,122 00	
Minors' licenses	70 00	
	$7,043 90	

EXPENDED.

For salaries of			
Chief, L. J. Cloyes	$1,800 00		
Deputy Chief, W. F. Batchelder	875 00		
Captains:—			
M. J. Folsom	1,400 00		
T. H. Lucy	116 66		
John F. Murray	1,400 00		
Fred B. Pullen	1,400 00		
Court officer, W. F. Batchelder	490 75		
Inspector, Jas. E. Murray	1,400 00		
Sergeants	8,216 00		
Patrolmen	85,967 29		
Drivers	4,749 64		
Matrons	730 00		
		108,545 34	
Badges, Burditt & Bynner		31 75	
Bag, W. W. Winship		5 00	
Bicycles:—			
J. L. Moseley	$30 00		
John E. Winslow	90 00		
		120 00	
Billies, Wm. F. Chester		20 00	
Buttons, D. Evans & Co.		25 00	
Carriage (exchange) Chas. Waugh & Co.		275 00	
Car tickets, W. E. Street Railway Co.		200 00	
Amounts carried forward		$109,222 09	$113,550 42

Police Department — Continued.

Amounts brought forward		$109,222 09	$113,550 42
For Cash expended for sundries:—			
L. J. Cloyes	$32 00		
M. J. Folsom	12 85		
J. E. Murray	57 40		
J. F. Murray	32 46		
F. B. Pullen	13 00		
		147 71	
Chevrons, devices, silver figures:—			
Samuel O. Aborn . . .	$5 60		
Wm. F. Batchelder . . .	3 00		
Mrs. J. E. Marshall . .	26 95		
Raphael Masstrangialo . .	36 42		
		71 97	
Chimneys, mantles, Boston Gas Appliance Exchange		8 10	
Cleaning carpets, Geo. F. Ricker . . .		16 29	
Cleaning stations		227 40	
Cloth for uniforms, Wendell, Fay & Co. .		352 00	
Detective cuffs, John P. Lovell Arms Co.		7 13	
Directories:—			
Bass & Co.	2 00		
E. F. Hunt & Co. . . .	18 00		
		20 00	
Disinfectants, R. S. Downe Co.		10 00	
Dues, Gas Consumers' Association . . .		24 00	
Expressage:—			
Hatch & Co.	60		
Savage & Son	$7 75		
		8 35	
Electrical work and supplies:—			
Electric Gas Light Co. .	$2 39		
Pettingell, Andrews Co. .	14 31		
		16 70	
Firearms and repairs, Wm. Read & Sons		9 30	
Furniture and repairs and bedding:—			
H. H. Cotton & Co. . .	$19 00		
James Grant	25 87		
D. W. Hyde & Co. . . .	11 79		
Phillips Bros. & Co. . .	7 75		
		64 41	
Amounts carried forward		$110,205 45	$113,550 42

Police Department — Continued.

Amounts brought forward		$110,205 45	$113,550 42
For Hardware, supplies:—			
Burditt & Bynner . . .	$42 53		
W. T. McGuire	6 72		
Sundry persons	4 85		
		54 10	
Harness and repairs:—			
Chas. E. Berry	$29 50		
Wm. H. Roberts . . .	10 60		
		40 10	
Hay, grain:—			
J. S. Bradeen	$71 70		
A. G. Dore & Co. . . .	312 39		
		384 09	
Horse board and use of telephone, Whiting & Smith		540 82	
Horse-shoeing:—			
Wm. Balmer	$48 00		
T. Burke	35 50		
G. W. Lowd	19 50		
Thos. Smith	38 50		
		141 50	
Ice:—			
Boston Ice Co.	$12 00		
Fresh Pond Ice Co. . . .	24 56		
		36 56	
Installing Electric Fixtures, Inspection of Wires		19 60	
Laundry work, W. H. Dow		12 33	
Lights:—			
Cambridge Electric Light Co.	$60 04		
Cambridge Gas Light Co. .	977 37		
		1,037 41	
Medicines, drugs, L. W. Reycroft . . .		10 05	
Painting etc., E. Tripp & Co.		12 00	
Photographs, Garth's Studio		24 00	
Polish, C. M. Kimball		5 25	
Amounts carried forward		$112,523 26	$113,550 42

Police Department — Concluded.

Amounts brought forward		$112,523 26	$113,550 42
For Professional attendance:—			
Dr. L. L. Bryant . . .	$6 00		
Dr. Wm. H. Clancy . .	4 00		
Dr. P. M. Fitzsimmons .	3 00		
Dr. W. H. Tyler . . .	5 00		
		18 00	
Repairing lighting apparatus, supplies, etc.:—			
Geo. F. Dickson	$16 65		
Hoyt Inspection and Gas Check Co.	10 00		
		26 65	
Safe, Brock Bros.		8 00	
Stationery, printing:—			
Cambridge Chronicle Co. .	$15 00		
Carter's Ink Co.	3 00		
Cotton & Gould	145 23		
Lombard & Caustic . . .	140 82		
Stationery Department .	55 82		
		359 87	
Sundry supplies:—			
Jas. C. Moor.	$31 30		
Jas. H. Wyeth & Co. . .	5 73		
Sundry persons	23 56		
		60 59	
Telephone rent and tolls		398 35	
Use of horse, Whiting & Smith		21 00	
Wagon repairs, Chas. Waugh & Co. . .		134 70	
Total			$113,550 42

Public Library Department.

Appropriation		$19,000 00
RECEIVED.		
For Dogs' licenses for 1896	$3,732 17	
Fines and catalogues	534 95	
Rebate on bill	5 82	
	$4,272 94	
Amount carried forward		$19,500 00

Public Library Department — Continued.

Amount brought forward			$19,000 00
	EXPENDED.		
For Salaries of			
Librarian, Wm. L. R. Gifford	$2,091 67		
Assistants	4,653 68		
Janitors:—			
T. M. Thomas	1,169 64		
S. A. Harris	30 00		
		$7,944 99	
Advertising		6 00	
Baskets, Hopkinson & Holden		7 50	
Binding and binders:—			
E. W. Bettinson . . .	$17 28		
Boston Bookbinding Co. .	5 50		
Chas. W. Facey	167 95		
David Farquhar	69 15		
J. H. H. McNamee . . .	661 33		
Nelson Mfg. Co. . . .	9 50		
		930 71	
Books, periodicals, etc.:—			
J. Q. Adams & Co. . .	$15 00		
Amee Bros.	554 03		
D. Appleton & Co. . .	6 00		
Balch Bros.	34 00		
Boston Book Co. . . .	164 24		
John W. Cadby	104 50		
T. H. Castor & Co . . .	173 45		
W. B. Clarke & Co. . .	458 98		
Cleveland Public Library	10 00		
H. C. Cormack	5 00		
Henry L. Dempsey . .	30 00		
Estes & Lauriat	15 00		
French & Bryant . . .	15 00		
Harper's Weekly Club .	38 00		
D. H. Hurd & Co. . . .	30 00		
International Journal of Ethics	15 00		
Little, Brown & Co. . .	3,111 26		
Amounts carried forward . .	$4,779 46	$8,889 20	$19,000 00

Public Library Department — Continued.

Amounts brought forward. .	$4,779 46	$8,889 20	$19,000 00
For Books, periodicals, etc.:—			
Geo. E. Littlefield . . .	328 72		
Joel Munsell's Sons . .	5 00		
G. P. Putnam's Sons . .	5 00		
Sarah Saunders Smith . .	5 00		
Sundry persons . . .	22 17		
		5,145 35	
Carpentry, W. Fillmore & Co.		20 72	
Cash for sundries, W. L. R. Gifford . .		76 91	
Delivery of books:—			
Wm. B. Cade	$537 84		
M. I. Dow	35 00		
E. C. Gove	35 00		
H. M. Grant	35 00		
Jas. W. Hunnewell . .	75 00		
Carrie E. Phillips . . .	50 00		
L. W. Reycroft . . .	29 17		
Michael Whalen . . .	54 16		
		851 17	
Design for book plate, Haida N. Parker .		15 00	
Directories:—			
W. A. Greenough & Co. .	$23 50		
Sampson, Murdock & Co.	5 00		
		28 50	
Elec. apparatus and repairs		8 98	
Engraving, Boston Bank Note Co. . .		42 00	
Expressage, Sawin's Express		47 45	
Fuel:—			
J. A. Heaton	$224 10		
Richardson & Bacon . .	184 50		
Weighing, H. W. Brooks .	4 50		
		413 10	
Furniture and furnishings:—			
Bardwell, Anderson & Co.	$20 00		
Heywood Bros. & Co. .	15 00		
Irving & Casson . . .	19 00		
Robt. Josselyn	21 04		
Mrs. E. C. Miles . . .	85 00		
Amounts carried forward . .	$160 04	$15,538 38	$19,000 00

Public Library Department — Continued.

Amounts brought forward .	$160 04	$15,538 38	$19,000 00
For Furniture and furnishings: —			
Paine Furniture Co. . .	29 90		
John Quin	49 40		
Worcester Bros. . . .	14 41		
		253 75	
For Hardware, supplies: —			
Brock & Eaton	$39 36		
Burditt & Bynner . . .	9 98		
Sundry persons	6 80		
		56 14	
Heating apparatus repairs: —			
Greene & Co.	$8 43		
Sundry persons	8 10		
		16 53	
Hose, Boston Woven Hose Co.		18 75	
Ice, Fresh Pond Ice Co.		19 34	
Insurance, R. B. Walker		288 00	
Lights, etc., Boston Gas Appliance Exchange		220 10	
Lighting: —			
Cambridge Elec. Light Co.	$1,004 40		
Cambridge Gas Light Co.	108 09		
		1,112 49	
Map, Geo. W. Stadly & Co.		8 00	
Mason work, Thos. Leahy & Son . . .		20 00	
Painting, etc., J. L. P. Ackers		28 62	
Rent, the Prospect Union		60 00	
Repairing roof, Wm. Gordon		8 70	
Stamps and pads, H. C. Dimond & Co. .		18 26	
Stationery, printing, etc: —			
Amee Bros.	$8 85		
Cambridge Co-operative Society	33 00		
Carter, Rice & Co. . . .	10 00		
Oliver B. Graves . . .	305 73		
Hooper, Lewis & Co. . .	25 65		
Library Bureau	84 16		
Little, Brown & Co. , .	498 40		
Amounts carried forward . .	$965 79	$17,667 06	$19,000 00

Public Library Department — Concluded.

Amounts brought forward . .	$965 79	$17,667 06	$19,000 00
For Stationery, printing, etc.:—			
Geo. E. Littlefield . . .	9 30		
Lombard & Caustic . .	18 17		
Sanson's Lime Pen Co. .	6 00		
Samuel Ward Co. . . .	8 20		
E. W. Wheeler	276 70		
Sundry persons	6 50		
		1,290 66	
Sundries		11 35	
Telephone rent and tolls		20 75	
Typewriter supplies and repairs:—			
W. M. Belcher & Co. . .	$7 00		
Hammond T. W. Co. . .	50		
		7 50	
Total			18,997 32
Balance unexpended			$2 68

Public Library (East Cambridge Branch).

Appropriation			$1,050 00
EXPENDED.			
For Salary of Superintendent:—			
John J. Henderson . . .	$216 64		
Ass't Chas. S. Marsh . .	67 00		
		$283 64	
Binders, Boston Bookbinding Co. . . .		15 00	
Books and periodicals:—			
Amee Bros.	$55 13		
W. B. Clarke & Co. . .	129 55		
Little, Brown & Co. . .	27 25		
		211 93	
Furniture and furnishings:—			
Bardwell, Anderson & Co.	$60 00		
Derby Desk Co.	25 00		
Library Bureau	6 00		
Paine Furniture Co. . .	50 50		
W. W. Pratt	6 00		
		147 50	
Amounts carried forward		$658 07	$1,050 00

Public Library (East Cambridge Branch) — Concluded.

Amounts brought forward		$658 07	$1,050 00
Lighting apparatus, Boston Gas Appliance Exchange		29 50	
Lighting, Cambridge Gas Light Co.		10 92	
Rent, Robinson Estate		91 67	
Signs, Clarence V. Hadley		13 25	
Signboard, John Quin		5 51	
Sundries		17 12	
Total			826 04
Balance unexpended			$223 96

Public Property (City Buildings, Care and Repair.)

Appropriation			$27,500 00
RECEIVED.			
For Lamps		$5 66	
Rents:—			
Armories	$800 00		
Third District Court rooms	450 00		
Old bridge school house	60 00		
Water Works office, shop, etc.	2,000 00		
		3,310 00	
Rent of land:—			
Wm. Hanlon	$249 96		
Jas. S. McMahon	36 00		
		285 96	
Sale of building		271 00	
		$3,872 62	
EXPENDED.			
For Salaries of janitors		10,725 17	
Dues, Gas Consumer's Association		53 53	
Fuel:—			
Baker-Hunnewell Co.	$59 43		
L. G. Burnham & Co.	15 69		
P. F. Gayton & Co.	19 40		
J. A. Heaton	1,518 90		
Amounts carried forward	$1,613 42	$10,778 70	$27,500 00

Public Property (City Buildings, Care and Repair) — Continued.

Amounts brought forward . .	$1,613 42	$10,778 70	$27,500 00
For Fuel:—			
H. Wellington & Co. . .	1,844 53		
Weighing, H. W. Brooks .	15 00		
		3,472 95	
Lights:—			
Camb. Elec. Light Co. .	$1,568 90		
Camb. Gas Light Co. . .	771 16		
		2,340 06	
Removing night-soil, R. M. Johnson . .		12 00	
Use of chairs, Pettingell & Pear . . .		70 50	
Sundries		2 17	
Repairs and alterations:—			
Alterations at Police Station (Ward IV Bldg.), L. W Crowe & Co.		854 50	
Boilers, Roberts Iron Works Co. . .		1,486 00	
Carpentry:—			
E. W. Boynton & Co. .	$28 16		
O. B. French	80 78		
W. Fillmore & Co. . .	354 70		
W. H. Norris	1,189 04		
John Quin	141 28		
M. F. Tracy & Son . .	8 31		
		1,802 27	
Cleaning carpets, Worcester Bros. . .		46 86	
Clock repairs:—			
A. J. Applegate & Co. .	$8 75		
The E. Howard Watch & Clock Co.	65 00		
		73 75	
Elevator repairs, Whittier Machine Co.		7 15	
Furniture repairs:—			
James Grant	$33 85		
Worcester Bros. . . .	6 00		
		39 85	
Grading and sodding, Thos. O'Hara . .		94 00	
Amounts carried forward		$21,080 76	$27,500 00

Public Property (City Buildings, Care and Repair)—Continued.

Amounts brought forward		$21,080 76	$27,500 00
For Repairs and alterations:—			
Heating and ventilating apparatus repairs:—			
Brock Bros.	$7 90		
Evans, Almiral & Co. . .	77 67		
Wm. Fitzgerald	125 94		
Greene & Co.	289 96		
Edw. Kendall & Sons . .	42 33		
Roberts Iron Works Co. .	16 97		
		560 77	
Lighting apparatus repairs, George F. Dickson		10 51	
Mason work:—			
J. Delaney	$39 00		
Henry McGahey	204 50		
M. N. Stearns	638 76		
		882 26	
Drain work, E. W. Clark		660 56	
Metal work, E. Van Norden & Co. . .		8 00	
Painting, glazing:—			
J. L. P. Ackers	$277 76		
T. H. Donlan.	28 50		
W. J. Edwards	13 75		
George H. Hughes . . .	5 00		
Chas. A. Sawyer . . .	104 01		
George W. Stacy . . .	103 27		
George D. Stacy . . .	41 65		
Woods Bros.	193 00		
		766 94	
Paving, H. T. Soper		15 30	
Plastering, Wm. J. Heron		43 40	
Plumbing:—			
Brock Bros.	$6 72		
Ernest W. Clark . . .	968 24		
Greene & Co.	196 01		
Levi Hawkes	68 27		
Huey Bros.	11 98		
D. J. Keefe & Co. . . .	76 73		
Amounts carried forward . .	$1,327 95	$24,028 50	$27,500 00

Public Property (City Buildings, Care and Repair) — Continued.

Amounts brought forward . .	$1,327 95	$24,028 50	$27,500 00
For Repairs and alterations:—			
Plumbing:—			
F. A. Keniston Eng. Co.	43 88		
John J. Long	43 16		
H. L. Rose	186 61		
		1,601 60	
Putting up awnings, Jas. Martin & Son		6 00	
Removing ashes, Wm. Terry		12 00	
Roof repairs:—			
John J. Blevins . . .	$123 76		
H. F. Peak	48 73		
		172 49	
Stairs, Hilton & Jeffery		85 00	
Wiring, Inspection of Wires		8 80	
Sundries		47 62	
Supplies:—			
Ash barrels, County of Middlesex . .		24 00	
Electric supplies, shades, Pettingell, Andrews Co.		52 29	
Floor dressing, John H. Benway . .		20 00	
Furniture and furnishings:—			
Jas. A. Furfey . . .	$10 90		
Heywood Bros. & Wakefield Co.	7 50		
D. W. Hyde & Co. . .	30 70		
Phillips Bros. & Co. .	40 75		
George H. Richter & Co.	177 40		
Stewart Screen Co. . .	35 00		
		302 25	
Gravel:—			
James Gray	8 00		
Thomas McSorley . .	5 25		
		13 25	
Hardware, tools and supplies:—			
G. P. Anderson . . .	$38 94		
Brock Bros.	19 39		
Burditt & Bynner . .	137 38		
Amounts carried forward . .	$195 71	$26,373 80	$27,500 00

Public Property (City Buildings, Care and Repair) — Concluded.

Amounts brought forward . .	$195 71	$26,373 80	$27,500 00
For Hardware, tools and supplies:—			
C. Callahan Co.	9 00		
T. H. Kneeland	7 50		
W. T. McGuire	5 12		
W. A. Morrison	6 50		
National Mfg. Co. . . .	8 00		
F. A. White	12 99		
Whitney & Snow . . .	237 00		
D. J. Wild & Co. . . .	6 00		
		487 82	
Ice, Fresh Pond Ice Co.		52 51	
Magnesia coverings, S. C. Nightingale & Childs		18 18	
Oak case, Geo. H. Richter & Co. . . .		80 00	
Oil:—			
Lubron Mfg. Co. . . .	$59 22		
Standard Oil Co. . . .	5 21		
		64 43	
Packing, Lubron Mfg. Co.		12 18	
Pine, M. F. Tracy & Son		9 57	
Printing, Cambridge Chronicle Co. . . .		39 05	
Savogran, India Alkali Works		5 30	
Seal, Chas. P. Cox		75 00	
Signs, Woods Bros.		25 00	
Stone edge, Street Dept.		7 19	
Stone flag and edge, W. L. Clarke & Co. .		118 00	
Sundry supplies:—			
D. H. Dean	$11 25		
Diamond Match Co. . .	10 50		
J. A. Holmes & Co. . .	19 25		
Sundry persons	42 29		
		83 29	
Total			27,451 32
Balance unexpended			$48 68

Public Property (Incidentals).

Appropriation			$5,500 00
	EXPENDED.		
For Salaries of			
Supt. of Buildings, Wm. H. Gray	$1,979 17		
Inspectors:—			
Jas. W. Emery	1,000 00		
Wm. A. Ford	441 14		
C. H. M. Hunnewell . .	558 86		
Clerk, Lillian W. Hyde . .	314 00		
		$4,293 17	
Bicycle repairs:—			
J. L. Buckley & Co. . .	$10 75		
Sundry persons	4 55		
		15 30	
Care and repair of tower clocks:—			
Chas. H. Chandler, Treas.	$26 00		
The E. Howard Watch and Clock Co.	7 85		
A. K. Jones	52 00		
J. B. Mace	26 00		
Geo. M. Stevens . . .	3 80		
H. S. Woodworth . . .	32 00		
		147 65	
Carriage hire:—			
Irving Blake	$6 00		
E. A. Cutting	6 00		
J. E. Fabyan	16 00		
C. H. Lake	8 00		
Frank P. Merrill . . .	4 00		
John Nixon	16 00		
Whiting & Smith . . .	4 00		
		60 00	
Carriage repairs, Chas. W. Dailey . . .		30 00	
Car tickets, W. E. Street Railway Co. .		155 00	
Commission on sale, F. E. Shaw & Co. .		21 68	
Dinners:—			
Colonial Club	$27 50		
M. R. Jones	28 00		
		55 50	
Electrotypes, etc., Cambridge Chronicle Co.		39 15	
Amounts carried forward		$4,817 45	$5,500 00

Public Property (Incidentals) — Concluded.

Amounts brought forward		$4,817 45	$5,500 00
For Horse board, Chas. W. Dailey		265 50	
Horse-shoeing, Wm. Balmer		26 75	
Horse, Thos. G. Newgent		175 00	
Stationery, printing:—			
Cambridge Chronicle Co.	$53 34		
Cotton & Gould	13 83		
Lombard & Caustic	25 65		
Stationery Department	31 93		
		124 75	
Sundries		16 05	
Telephone rent and tolls		14 48	
Total			5,439 98
Balance unexpended			$60 02

Public Property (Land for School House, Ward Three).

Appropriation	$3,500 00
EXPENDED.	
For Land and damages, Chas. McMahon	$3,500 00

Public Property (Land for School House, Ward Five).

Appropriation		$6,200 00
EXPENDED.		
For Examination of title, Wm. V. Thompson	$32 00	
Land and damage, Edmund Reardon	6,168 00	
Total		$6,200 00

Public Property (New Latin School House).

Appropriation		$248,625 00
EXPENDED.		
For Advertising, Cambridge Chronicle Co.	$1 94	
Contract for building, John S. Jacobs & Son	94,953 26	
Plans, Hartwell, Richardson & Driver	4,500 00	
Printing, Cambridge Chronicle Co.	51 42	
Services of clerk of works, Hartwell, Richardson & Driver	512 00	
Total		$100,018 62
Balance unexpended		$148,606 38

Public Property (New School House, Ward One).

Appropriation			$15,735 11
Transferred from New School House, Ward One, Furniture			56 97
			$15,792 08
EXPENDED.			
For Contract for building, John McDonald & Son		$14,012 75	
Copper sign, M. J. Sheehan		35 00	
Draining basement, Greene & Co.		62 00	
Flag-staff, H. Pigeon & Sons		11 00	
Floor, Marble and Enamel Mosaic Co.		11 50	
Hardware, supplies:—			
Burditt & Bynner	$473 55		
F. A. Houdlette & Son	11 00		
		484 55	
Pipe and hose, Greene & Co.		175 00	
Plans, Aaron H. Gould		224 78	
Plastering, etc., Wm. J. Heron		268 80	
Roofing, National Roofing Co.		235 00	
Shades, etc., W. W. Pratt		220 80	
Wiring, Thos. Wiseman		17 00	
Wire guards, J. F. Capelle		33 90	
Total			$15,792 08

Public Property (New School House, Ward One, Furniture).

Appropriation			$3,000 00
Transferred to New School House, Ward One			56 97
			$2,943 03
EXPENDED			
For Ash barrels, County of Middlesex		$24 00	
Blackboard:—			
American Blackboard Co.	$95 80		
J. L. Hammett Co.	22 03		
		117 83	
Amounts carried forward		$141 83	$2,943 03

Public Property (New School House, Ward One, Furniture)—Concluded.

Amounts brought forward		$141 83	$2,943 03
For Carpentry, W. H. Norris		294 06	
Clocks, T. M. Kenney		84 00	
Filling, James Shea		100 00	
Fittings. Cambridge Gas Light Co.		7 20	
Furniture, furnishings:—			
Burditt & Bynner	$61 25		
Chandler Adjustable Chair & Desk Co.	1,470 00		
Derby Desk Co.	430 80		
Heywood Bros.	66 42		
Heywood Bros. & Wakefield Co.	28 00		
Worcester Bros.	13 50		
		2,069 97	
Hardware, etc., Burditt & Bynner		27 35	
Ladder, C. W. H. Moulton & Co.		5 00	
Mats, Jas. A. Furfey		38 75	
Plank walks, Patterson & Fox		145 00	
Service pipe, Cambridge Gas Light Co.		18 00	
Sundries		3 23	
Total			2,934 39
Balance unexpended			$8 64

Public Property (School Houses, Care and Repair).

Appropriation	$60,000 00
Transferred from Contingent Fund	483 25
	$60,483 25

EXPENDED.

For Salaries of janitors		$24,537 39	
Contract (Taylor School), I. B. Rice		609 38	
Dues, Gas Consumer's Association		11 40	
Examining titles, Wm. V. Thompson		25 00	
Expressage and moving furniture:—			
P. Biggin	$52 00		
Donovan's Express	12 25		
Amounts carried forward	$64 25	$25,183 17	$60,483 25

Public Property (School Houses, Care and Repair) — Continued.

Amounts brought forward . .	$64 25	$25,183 17	$60,483 25
For Expressage and moving furniture:—			
Hatch & Co.	5 00		
J. R. & C. S. Hersum . .	17 25		
Michael Kelly	5 75		
		92 25	
Fuel:—			
Baker-Hunnewell Co. . .	$103 65		
L. G. Burnham & Co. . .	5,467 05		
P. F. Gayton & Co. . .	231 70		
J. A. Heaton	5,946 12		
H. Wellington & Co. . .	1,932 58		
Weighing, H. W. Brooks .	116 70		
		13,797 80	
Lights:—			
Camb. Electric Light Co. .	$751 67		
Lamps	100 00		
Cambridge Gas Light Co. .	1,056 39		
		1,908 06	
Rent:—			
Alexander Dickinson . .	176 00		
J. F. O'Brien	676 00		
		852 00	
Sundries		5 92	
Repairs and alterations:—			
Blackboards:—			
American Blackboard Co.	$374 04		
J. L. Hammett & Co. .	13 00		
J. A. Swasey	34 84		
		421 88	
Carpentry:—			
E. W. Boynton . . .	$117 29		
W. Fillmore & Co. . .	405 77		
O. B. French	103 67		
W. H. Norris	1,896 83		
M. J. O'Connell . . .	97 77		
Patterson & Fox (Boardman School) . . .	2,388 10		
Amounts carried forward . .	$5,009 43	$42,261 08	$60,483 25

Public Property (School Houses, Care and Repair) — Continued.

Amounts brought forward . .	$5,009 43	$42,261 08	$60,483 25
For Repairs and alterations:—			
Carpentry:—			
John Quin	326 36		
I. B. Rice	165 95		
I. B. Rice (Taylor School, finishing rooms) . . .	1,060 62		
R. & C. G. Wentworth .	10 40		
		6,572 76	
Clock repairs:—			
The A. J. Applegate Co. .	$21 75		
Simon Flaig	8 50		
Miller Bros.	24 00		
		54 25	
Electrical work:—			
F. M. Buffum	$12 25		
F. Bryant & Co	24 87		
		37 12	
Furniture, repairs, etc.:—			
F. M. Eaton	$23 75		
T. B. Wentworth . . .	112 20		
		135 95	
Fence, A. Simpson		35 00	
Gate, National Mfg. Co.		40 00	
Grading and sodding, Thomas O'Hara .		285 00	
Heating and ventilating apparatus repairs:—			
Brock Bros.	$257 66		
Brock & Eaton	6 40		
Wm. Fitzgerald	102 17		
Greene & Co.	1,014 69		
W. Haley	24 83		
S. C. Higgins	1,231 07		
Johnson Elec. Service Co.	51 84		
John J. Long	7 50		
Moynahan & Co. . . .	413 93		
J. F. Pennell	16 49		
J. M. Price & Son. . . .	24 71		
Roberts Iron Works Co. .	246 57		
D. J. Wild & Co. . . .	37 85		
		3,435 71	
Amounts carried forward		$52,856 87	$60,483 25

Public Property (School Houses, Care and Repair) — Continued.

Amounts brought forward		$52,856 87	$60,483 25
For Repairs and alterations:—			
Lighting apparatus repairs, Cambridge Gas Light Co.		26 83	
Mason work:—			
Henry McGahey	$355 65		
Thos. Leahy & Son . . .	40 74		
M. N. Stearns	213 49		
		609 88	
Labor, W. H. P. Plummer		5 00	
Painting, glazing, papering:—			
J. L. P. Ackers	$693 02		
T. H. Donlan	23 40		
Lyman Fenn	49 35		
M. A. Feeley	91 24		
Clarence V. Hadley . . .	8 50		
Wm. Holden	6 00		
R. W. Hussey	25 45		
M. F. Marks	7 10		
Woods Bros.	228 95		
		1,133 01	
Plastering, Wm. J. Heron		482 23	
Plumbing:—			
Brock Bros.	$7 45		
Ernest W. Clark . . .	27 05		
W. Haley	161 39		
W. J. Hanna & Son . .	9 50		
John J. Long	309 84		
A. J. Marks	7 90		
J. T. Phelan	28 79		
Albert H. Ricker . . .	233 47		
H. L. Rose	439 57		
Wm. H. Sweeney . . .	85 89		
D. J. Wild & Co. . . .	5 70		
		1,316 55	
Repairs, Water Works		40 34	
Removing night-soil, R. M. Johnson . .		16 00	
Amounts carried forward		$56,486 71	$60,483 25

Public Property (School Houses, Care and Repair) — Continued.

Amounts brought forward		$56,486 71	$60,483 25
For Roof repairs:—			
John J. Blevins	$682 19		
H. F. Peak	6 49		
		688 68	
Sundry repairs:—			
J. B. Higgins	$6 25		
Sundry persons	49 29		
		55 54	
Supplies:—			
Ash-barrels, County of Middlesex . .		72 00	
Clocks:—			
Simon Flaig	$10 00		
T. M. Kenney . . .	29 00		
J. P. Shurtleff . . .	5 00		
		44 00	
Disinfectants, C. W. Lerned & Co. . .		75 00	
Dusters, brushes, brooms:—			
A. & E. Burton & Co. .	$130 86		
F. M. Eaton	18 00		
Greenwood & Co. . .	16 25		
Packard & Burrill . .	79 33		
G. H. Worcester & Co.	122 45		
		366 89	
Furniture and furnishings:—			
Chandler Adjust. Chair and Desk Co. . . .	$703 95		
Derby Desk Co. . . .	64 60		
P. Derby & Co. . . .	35 25		
Jas. A. Furfey . . .	156 12		
J. L. Hammett Co. . .	15 00		
Jos. Hartshorn & Son .	53 90		
Jos. W. Hartshorn & Co.	50 20		
Heywood Bros. & Co.	46 61		
L. D. Kalberg & Son .	23 75		
Paine Furniture Co. . .	24 30		
Phillips Bros. & Co. .	7 25		
George S. Perry & Co. .	468 72		
Amounts carried forward .	$1,649 65	$57,788 82	$60,483 25

Public Property (School Houses, Care and Repair)—Concluded.

Amounts brought forward . .	$1,649 65	$57,788 82	$60,483 25
For Supplies:—			
Furniture and furnishings:—			
W. W. Pratt	302 50		
Rourke & Kennedy . .	12 50		
Worcester Bros.	16 37		
		1,981 02	
Hardware, tools and supplies:—			
Brock Bros.	$12 48		
Burditt & Bynner . . .	108 04		
Dover Stamping Co. . .	16 00		
L. D. Marden . . .	39 00		
W. T. McGuire	16 27		
W. A. Morrison . . .	6 25		
J. M. Price & Son . . .	46 42		
Isaac Sexton & Co. . . .	110 00		
F. A. White	45 86		
		400 32	
Ladders, C. W. H. Moulton & Co. . .		20 15	
Lamps and electric supplies, Anchor Electric Co.		25 83	
Polish, Lothrop, Spooner Mfg. Co. . .		8 00	
Rubber goods, Robert Josselyn		13 75	
Rubber stoppers, Davidson Rubber Co. .		64 33	
Sawdust, Thos. A. Griffin		9 00	
Soap, Chas. R. Teele		15 00	
Sundry supplies:—			
Wm. H. Claflin & Co. .	$10 00		
A. C. Day	23 99		
Chas. E. Stevens & Co. .	18 80		
Wm. H. White	17 07		
Sundry persons	48 78		
		118 64	
Washing powder:—			
Peerless Powder Co. . .	$13 28		
Soaposo Powder Co. . .	9 15		
Standard Chemical Co. .	15 96		
		38 39	
Total			60,483 25

Public Property (Shooting Range).

Appropriation		$400 00
EXPENDED.		
For Carpentry, W. H. Norris	$340 80	
Cutting bushes and clearing, W. H. Norris	41 62	
Markers, S. C. Higgins	4 00	
Painting signs, Clarence V. Hadley	10 50	
Total		396 92
Balance unexpended		$3 08

School Department (Care of Truants).

Appropriation		$2,500 00
Transferred from School Department, Salaries		163 14
		$2,663 14
EXPENDED.		
For Board of truants, Middlesex County Truant School	$2,624 89	
Transportation:—		
Lucian S. Cabot $18 10		
John Carmichael 3 60		
Francis M. Mason 4 15		
Wm. H. Porter 12 40		
	38 25	
Total		$2,663 14

School Department (Flags).

Appropriation		$500 00
Transferred from Contingent Fund		75 00
		$575 00
EXPENDED.		
For Carpentry, W. H. Norris	$349 75	
Ensigns, halyards, Irving W. Wheeler & Co.	144 23	
Repairing flags, Frank Greenidge	59 00	
Replacing halyards, G. B. Donnells	2 50	
Work on flag-staffs, H. Pigeon & Sons	17 50	
Total		572 98
Balance unexpended		$2 02

School Department (Incidentals).

Appropriation			$900 00
Transferred from School Department, Text-books and Supplies			350 00
			$1,250 00

EXPENDED.

For Salaries of			
Secretary, S. B. Hubbard	$300 00		
Page, Chas. M. Jones	25 00		
		325 00	
Advertising		15 07	
Boxes, Charles Place		5 00	
Car tickets, W. E. Street Railway Co.		195 00	
Cash expended:—			
Herbert H. Bates	$15 37		
Francis Cogswell	29 29		
		44 66	
Collecting statistics, Moses M. Childs		6 00	
Engrossing, Boston Bank Note Co.		3 25	
Frame, Chas. H. L. Hunting		1 50	
High School graduating exercises:—			
Music:—			
S. Henry Hadley	$6 30		
Oliver Ditson Co.	15 53		
Orchestra, Cambridge Festival Orchestra	50 00		
Piano, Briggs & Briggs	5 00		
Sanders Theatre expenses	14 47		
Services, A. K. Jones	3 00		
		94 30	
Photographs, D. W. Butterfield		15 95	
Postage, F. M. Small		61 60	
Stationery, printing:—			
Cambridge Chronicle Co.	$29 80		
Co-operative Printing Society	78 75		
James H. Cox	28 00		
J. Frank Facey	4 00		
Amounts carried forward	$140 55	$767 33	$1,250 00

School Department (Incidentals) — Concluded.

Amounts brought forward . .	$140 55	$767 33	$1,250 00
For Stationery, printing:—			
G. B. Lenfest	17 50		
Lombard & Caustic . .	229 20		
Pulsifer, Cook & Co. . .	23 75		
Louis F. Weston . . .	52 25		
		463 25	
Vaccine virus:—			
Dr. Francis C. Martin . .	$5 50		
N. E. Vaccine Co. . . .	11 47		
		16 97	
Total			1,247 55
Balance unexpended . .			$2 45

School Department (Salaries).

Appropriation	$260,000 00
Transferred to School Department, Care of Truants . .	163 14
	$259,836 86

RECEIVED.

For Income from Hopkins Charity Fund . .	$702 52	
Tuition of non-resident pupils	1,599 50	
Tuition of state ward, Com. of Mass. . .	161 00	
	$2,463 02	

EXPENDED.

For Salaries of			
Superintendent, Francis Cogswell . . .		$3,000 00	
Superintendent's clerk, Althea B. Frost .		630 00	
Agent, S. B. Hubbard		2,000 00	
Clerk, Myrta E. Smith		50 00	
Special Instructors:—			
Botany, Sarah E. Brassill .	$595 00		
Drawing:—			
Peter Roos	1,730 00		
Lucia N. Jennison . .	800 00		
Gymnastics, Catherine F. Pedrick	600 00		
Amounts carried forward . .	$3,725 00	$5,680 00	$259,836 86

School Department (Salaries.) — Concluded.

Amounts brought forward . .	$3,725 00	$5,680 00	$259,836 86
For Salaries of special instructors.—			
Music, Fred'k E. Chapman	2,000 00		
Sewing:—			
Nancy T. Dawe . . .	372 00		
Agnes Gordon	600 00		
Alice H. Nay	600 00		
Primary, Mary A. Lewis .	1,030 00		
Inspector of Kindergartens, Laura Fisher . .	50 00		
	———	8,377 00	
Teachers in			
Latin School	$17,335 00		
English High School . .	25,194 09		
Grammar Schools . . .	100,333 10		
Primary Schools	72,050 45		
Wellington Training School	11,897 00		
Kindergarten Schools . .	9,820 28		
Substitutes	760 00		
	———	237,389 92	
Teachers in evening schools:—			
Drawing	1,060 00		
High	1,274 50		
Allston	689 00		
Putnam	654 00		
Shepard	298 00		
Webster	445 00		
	———	4,420 50	
Salaries of			
Truant Officers		3,430 00	
Porter, John H. Lemon		500 00	
Rebate on tuition payments		21 00	
		———	
Total			259,818 42
Balance unexpended			$18 44

School Department (Text-Books and Supplies).

Appropriation		$18,000 00
Transferred to School Department, Incidentals		350 00
		$17,650 00
RECEIVED.		
For Sale of and damage to books	$311 86	
EXPENDED.		
For Apparatus and supplies:—		
American Cork Co.	$2 40	
Bausch & Lomb Optical Co	7 35	
Mrs. S. E. Berthold	10 20	
Brown, Durrell & Co.	48 64	
Burditt & Williams	26 30	
Cambridge Manual Training School	12 00	
Chandler & Barber	354 75	
Davidson Rubber Co.	45 62	
Eimer & Amend	79 15	
Elec. Gas Light Co.	7 24	
The Fairbanks Co.	6 55	
Frost & Adams	351 80	
Greenough, Adams & Cushing	1,821 90	
J. L. Hammett Co.	793 16	
John C. Haynes & Co.	16 00	
Inspection of Wires	45 00	
Jones, McDuffee & Stratton	2 63	
G. F. King & Co.	263 95	
L. E. Knott App. Co.	85 21	
G. F. King & Merrill	60 25	
H. Sanford Leach	17 00	
Lowell Wrench Co.	30 65	
N. Y. Insulated Wire Co.	21 38	
Pettingell, Andrews Co.	29 53	
Prang Ed. Co.	182 11	
Pulsifer, Cook & Co.	2,516 13	
Geo. S. Perry & Co.	63 20	
Geo. H. Richter & Co.	9 60	
E. S. Ritchie & Sons	246 03	
Silver, Burdett & Co.	65 63	
Amounts carried forward	$7,221 36	$17,650 00

School Department (Text-Books and Supplies) — Continued.

Amounts brought forward . .	$7,221 36		$17,650 00
For Apparatus and supplies:—			
Thompson, Brown & Co. .	64 38		
Weeks & Potter Co. . .	61 74		
Wilson, Larrabee & Co. .	7 54		
John D. Young & Sons .	12 00		
Zeigler Electric Co. . . .	291 55		
		$7,658 57	
Baskets, Hopkinson & Holden		7 50	
Binding:—			
David Farquhar . . .	$321 70		
J. H. H. McNamee . .	14 80		
		336 50	
Books:—			
Allyn & Bacon	$26 67		
American Book Co. . . .	658 57		
Blodgett, Ordway & Webber	20 05		
Boston School Supply Co.	316 45		
T. H. Castor & Co. . . .	141 72		
De Wolfe, Fiske & Co. .	154 80		
Ginn & Co.	2,013 91		
J. L. Hammett Co. . . .	25 95		
Harper & Bros.	8 34		
D. C. Heath & Co. . . .	455 33		
Houghton, Mifflin & Co. .	480 88		
Lee & Shepard	24 08		
Longmans, Green & Co. .	105 00		
Leach, Shewell & Sanborn	1,290 33		
Lothrop Publishing Co. .	110 00		
Mass. Bible Society . . .	13 75		
Thompson, Brown & Co. .	1,506 10		
University Publishing Co.	70 79		
Wm. Ware & Co. . . .	676 24		
Willard Small	29 76		
		8,128 72	
Boxes, Chas. Place		12 00	
Car tickets, W. E. Street Railway Co. . .		25 00	
Amounts carried forward		$16,168 29	$17,650 00

School Department (Text-Books and Supplies) — Concluded.

Amounts brought forward		$16,168 29	$17,650 00
For Cash for sundries:—			
H. J. Chase	$9 93		
S. B. Hubbard	19 16		
Emma A. Scudder . . .	8 33		
Delia M. Stickney . . .	8 62		
		46 04	
Copies of music, Alfred Mudge & Son .		4 00	
Diplomas, Boston Bank-Note Co. . . .		166 30	
Directory, E. F. Hunt & Co.		6 00	
Expressage and moving furniture:—			
Bancroft's Express . . .	$14 80		
H. W. Bettinson & Co. .	16 70		
P. Biggin	116 00		
W. A. Nichols	76 30		
Sawin's Express	12 55		
Sundry persons	6 80		
		243 15	
Motor, Chandler & Farquhar		12 00	
Pianos:—			
Geo. W. Beardsley . . .	$65 00		
B. Mayhew	50 00		
Henry F. Miller & Sons .	425 00		
		540 00	
Piano covers, E. M. Cundall		5 50	
Postage, F. M. Small		73 20	
Printing:—			
Co-operative Printing Co.	$144 70		
J. Frank Facey	13 75		
G. B. Lenfest	7 75		
Louis F. Weston . . .	158 25		
		324 45	
Stamps, H. C. Dimond & Co.		4 03	
Subscription, N. E. Publishing Co. . .		9 35	
Telephone set, etc., Taber & Mayer . .		22 80	
Tuning pianos:—			
Fred H. Bacon	$11 00		
Chas. H. Fosgate . . .	12 25		
		23 25	
Total			17,648 36
Balance unexpended . .			$1 64

School Department (Transportation of Pupils).

Appropriation		$450 00
EXPENDED.		
For Transportation of pupils, West End Street Railway Co.	$450 00	
Total		$450 00

Sealer of Weights and Measures.

Appropriation		$1,600 00
Transferred from Contingent Fund		19 73
		$1,619 73
RECEIVED.		
For Fees for sealing, A. F. Roberts	$422 90	
Fees for weighing:—		
Thos. Gurnham $10 15		
E. I. Train 118 03		
	128 18	
	$551 08	
EXPENDED.		
For Salary of		
Sealer, A. F. Roberts	$1,000 00	
Car tickets W. E. Street Railway Co.	10 00	
Horse board, Geo. D. Merrill	300 00	
Horseshoeing:—		
Gerry & Rufer $27 75		
John B. Rufer 7 00		
	34 75	
Moving pole, Cambridge Elec. Lt. Co.	6 00	
Printing:—		
Lombard & Caustic $7 00		
J. S. Nightingale 6 25		
	13 25	
Services sealing, C. D. Kinnear	162 50	
Stamps and brands, Jas. Ryan	6 30	
Stationery, Stationery Department	7 40	
Sundries	5 45	
Wagon repairs, Chas. Waugh & Co.	10 00	
Weighing fees:—		
Thos. Gurnham $5 07		
E. I. Train 59 01		
	64 08	
Total		$1,619 73

Sewer Department (Clay Lands).

Appropriation			$21,131 32
Transferred to Street Department (Clay Lands)			13,000 00
			$8,131 32
EXPENDED.			
For Labor, as per pay-rolls		$4,607 00	
Bricks, D. W. De Rosay		1,360 47	
Carpentry and mill work, J. H. Keenan & Co.		71 81	
Cement, Waldo Bros.		551 50	
Damages, Boston Packing & Provision Co.		25 00	
Gravel:—			
John Gourley	$75 58		
Josephine E. Stone	17 50		
		93 08	
Lumber, Wm. H. Wood & Co.		66 02	
Sewer pipe:—			
D. W. Lewis	$76 75		
Portland Stone Ware Co.	712 11		
		788 86	
Sand, T. A. Callaghan		19 20	
Teaming:—			
P. Biggin	$4 50		
T. A. Callaghan	40 50		
Thos. O'Hara	228 38		
		273 38	
Total			$7,856 32
Balance unexpended			$275 00

Sewer Department (Construction).

Appropriation			$30,000 00
Transferred from Sewers, Tannery Brook			1,500 00
" " " Maintenance			800 00
			$32,300 00
RECEIVED.			
For Assessments		$13,249 32	
Catch basins		152 75	
Clay		2 20	
Permits		607 92	
		$14,012 19	
Amount carried forward			$32,300 00

Sewer Department (Construction) — Continued.

Amount brought forward			$32,300 00
	EXPENDED.		
For Labor as per pay-rolls		$16,865 32	
Bricks, D. W. De Rosay		1,742 85	
Cement:—			
Berry & Ferguson . . .	$25 00		
I. W. Pinkham Co. . . .	383 78		
Waldo Bros.	343 65		
		752 43	
Frames, covers, traps, etc.:—			
Barbour, Stockwell Co. .	$652 27		
Boston Double Catch Basin Co.	68 80		
Mechanics Iron Foundry Co.	10 20		
		731 27	
Fuel, Coleman Bros.		479 47	
Gravel, sand, loam:—			
Thomas O'Hara	86 50		
John T. Scully	22 25		
M. Sullivan	5 25		
		114 00	
Hardware, Burditt & Bynner		7 68	
Iron work, Miller & Shaw		174 14	
Land and damage, Harvard College . .		490 06	
Lumber and mill work:—			
J. H. Keenan & Co. . .	$71 33		
D. C. Scranton	44 83		
Wm. H. Wood & Co. . .	1,750 50		
		1,866 66	
Moving buildings:—			
H. S. Angus	$35 00		
Richardson & Bacon . .	50 00		
		85 00	
Pattern work, Tripp & Norman		20 51	
Piles, John T. Scully		72 30	
Pipe and labor, Green & Co.		27 00	
Proportional part of cost of sewer, city of Somerville		260 00	
Amounts carried forward		$23,688 69	$32,300 00

Sewer Department (Construction)—Concluded.

Amounts brought forward		$23,688 69	$32,300 00
For Repayment of assessment, John A. Fulton		64 52	
Repairs, Water Works		51 60	
Sewer pipe, cement:—			
D. W. Lewis	$2,039 50		
Portland Stone Ware Co.	3,613 86		
		5,653 36	
Stone work, John McNamee's Sons		23 65	
Stone:—			
John J. Cuddihy (manhole covers)	$50 00		
Austin Ford & Son (manhole covers)	18 00		
S. & R. J. Lombard (catch-basin stones)	148 20		
Mass. Broken Stone Co.	413 45		
		629 65	
Sundries		4 62	
Teaming:—			
P. Biggin	$108 25		
Thomas O'Hara	991 37		
		1,099 62	
Use of pump, E. R. Cheney		342 00	
Use of engine, George E. Worthen		380 00	
Total			31,937 71
Balance unexpended			$362 29

Sewer Department (Maintenance).

Appropriation		$25,000 00
Transferred to Sewers, Construction		800 00
		$24,200 00
RECEIVED.		
For Catch basins	$30 51	
Dredging at outlet, City of Somerville	1,997 73	
Filling, manure and sand	29 90	
Rent	108 00	
	$2,166 14	
Amount brought forward		$24,200 00

Sewer Department (Maintenance) — Continued.

Amount brought forward			$24,200 00
EXPENDED.			
For Salaries of			
Superintendent, T. L. Pike	$2,000 00		
Clerk, Mary E. Rowen .	392 50		
		2,392 50	
Labor, as per pay-rolls		8,973 56	
Advertising, Boston Herald Co. . . .		7 38	
Bricks, D. W. De Rosay		166 50	
Brooms:—			
C. W. Carman	$6 00		
The Diamond Broom Co.	7 00		
		13 00	
Car tickets, W. E. Street Railway Co. .		75 00	
Canvas covers, etc., Nolan Bros. . . .		54 20	
Carriage repairs, Chas. Waugh & Co. .		9 80	
Cement:—			
I. W. Pinkham Co. . .	$56 10		
Waldo Bros.	122 75		
		178 85	
Cleaning catch-basins, John Horigan . .		4,126 50	
Dredging, Eastern Dredging Co. . . .		3,244 50	
Inspecting dredging, Stephen B. Wood .		27 50	
Drain work:—			
Jas. S. Cole Heirs . . .	$23 74		
Coleman Bros. pd. Arthur W. Balcom	6 00		
Matthew Corkery . . .	11 50		
Samuel McCullock . . .	37 45		
		78 69	
Excelsior clothing, H. M. Sawyer & Son .		42 59	
Fuel, Coleman Bros.		12 00	
Gate and cover, Barbour, Stockwell Co. .		9 25	
Gas, Cambridge Gas Light Co.		17 71	
Gravel and sand, Thos. O'Hara		23 50	
Grates, Barbour, Stockwell Co.		105 15	
Hardware, tools and repairs and supplies:—			
Burditt & Bynner . . .	$424 03		
Edson Mfg. Co.	19 72		
Chas. H. Goldsmith . .	46 10		
Amounts carried forward . .	$489 85	$19,558 18	$24,200 00

Sewer Department (Maintenance)—Continued.

Amounts brought forward . .	$489 85	$19,558 18	$24,200 00
For Hardware, tools and repairs, and supplies:—			
James Maitland	167 81		
John McNamee's Sons .	13 95		
Morss & Whyte	8 50		
Whittier Hardware Co. .	110 67		
M. F. Whiton & Co. . .	9 85		
		800 63	
Harness repairs, Wm. H. Roberts . . .		35 35	
Hay, grain, E. R. Luke & Co.		332 46	
Horse-shoeing, John F. Gurry		125 50	
Hose and rubber goods, packing:—			
Boston Woven Hose Co. .	$191 65		
Robert Josselyn	106 00		
		297 65	
Iron work, Miller & Shaw		149 44	
Laying pipe, Michael Cleary		7 35	
Lumber, Wm. H. Wood & Co.		259 05	
Mill work:—			
J. H. Keenan & Co. . .	$122 64		
D. C. Scranton	74 31		
		196 95	
Oatmeal, Charles James		8 25	
Oil, Standard Oil Co.		28 83	
Pipe and labor, Greene & Co.		13 84	
Piles:—			
J. N. Hayes & Co. . . .	$55 00		
John T. Scully	22 80		
		77 80	
Repairing rubber boots, L. G. Sandberg .		5 10	
Repairing engines, Geo. E. Worthen . .		60 60	
Sewer pipe, cement:—			
D. W. Lewis	$152 25		
Portland Stone Ware Co. .	75 06		
		227 31	
Stationery, printing:—			
Cotton & Gould	$16 75		
Stationery Department .	7 51		
		24 26	
Amounts carried forward		$22,208 55	$24,200 00

Sewer Department (Maintenance)—Concluded.

Amounts brought forward		$22,208 55	$24,200 00
Sundries		14 90	
Teaming, as per pay-roll		752 86	
Wagons and repairs, F. Ivers & Son		306 75	
Total			23,283 06
Balance unexpended			$916 94

Sewer Department (Tannery Brook).

Appropriation			$3,000 00
Transferred to Sewers, Construction			1,500 00
			$1,500 00
EXPENDED.			
For Examining title, Wm. V. Thompson		$17 00	
Land and damage:—			
George C. Claussen	$306 00		
Lucy Lerned, *et al.*	80 78		
Walter H. Lerned	176 50		
Wm. P. and Eva Lohrbach	24 08		
Joseph F. Wilson	250 00		
		837 36	
Right of way, George H. Wood		300 00	
Total			1,154 36
Balance unexpended			$345 64

Sinking Funds (General).

Appropriation			$96,360 00
Additional Appropriation			365 00
			$96,725 00
EXPENDED.			
For Salaries:—			
Wm. W. Dallinger, Treasurer	$300 00		
John McDuffie, Secretary	25 00		
		$325 00	
Rent of Box, Boston Safe Deposit Co.		40 00	
Amount as required by City Ordinance for payment of debt, Commissioners of Sinking Funds		96,360 00	
Total			$96,725 00

Sinking Fund (Harvard Bridge).

Appropriation			$8,000 00
EXPENDED.			
For amount as required by City Ordinance for payment of debt, Commissioners of Sinking Funds			$8,000 00

State Aid.

Appropriation			$23,500 00
RECEIVED.			
From the Commonwealth of Massachusetts in reinbursement, in part, of the amount the city has advanced, in conformity to the laws of the State, to volunteers and their families, or other dependents of volunteers in the army and navy:—			
For military aid	$1,074 37		
State aid	12,221 00		
Burials of soldiers and sailors	420 00		
		$13,715 37	
Aid		238 12	
Money not called for on pay-roll		207 01	
		$14,160 50	
EXPENDED.			
For Salary of Clerk, Chas. L. Russell		$900 00	
State aid	$12,701 50		
Military aid	1,448 00		
Soldiers' and sailors' aid	6,267 00		
		20,416 50	
Aid:—			
Town of Leominster	$12 00		
Town of Melrose	144 80		
		156 80	
Board and care:—			
Cambridge Almshouse	$181 04		
Danvers Lunatic Hospital	508 39		
Medfield Insane Asylum	292 00		
Amounts carried forward	$981 43	$21,473 30	$23,500 00

State Aid — Concluded.

Amounts brought forward . .	$981 43	$21,473 30	$23,500 00
For Board and care:—			
Worcester Insane Asylum	169 46		
Worcester Lunatic Hospital	16 71		
		1,167 60	
Burials:—			
David Fudge & Son . .	35 00		
H. D. Litchfield	175 00		
Judson Litchfield . . .	35 00		
C. H. Lockhart	70 00		
A. E. Long	35 00		
J. F. Mullen	35 00		
Shea Bros.	35 00		
W. A. Taylor	70 00		
		490 00	
Car tickets, W. E. Street Railway Co. . .		15 00	
Fuel, Geo. M. Smith		157 40	
Stationery and printing:—			
E. W. Bettinson	1 00		
Cotton & Gould	1 70		
E. F. Hunt & Co. . . .	3 00		
Powell & Co.	57 50		
Stationery Department .	9 10		
		72 30	
Supplies:—			
George A. Davis . . .	$30 75		
C. F. Holmes	73 00		
		103 75	
Traveling expenses, C. L. Russell . . .		2 76	
Typewriting, E. W. Pike		9 25	
Total			23,491 36
Balance unexpended			$8 64

Stationery and Printing.

Appropriation		$3,000 00
RECEIVED.		
From sundry departments for supplies . .	$1,201 82	
Amount carried forward		$3,000 00

Stationery and Printing — Concluded.

Amount brought forward			$3,000 00
EXPENDED.			
For Advertising:—			
Cambridge Chronicle Co. .	$60 16		
James Cox	3 00		
F. Stanhope Hill . . .	3 00		
		66 16	
Binding documents:—			
Chas. W. Facey . . .	$25 00		
J. H. H. McNamee . . .	59 50		
		84 50	
Book-holders, J. D. Bartley		3 60	
Examination of bill, Charles Walker . .		10 00	
Postage, F. M. Small		700 00	
Printing:—			
Cambridge Chronicle Co. .	$126 43		
Cotton & Gould	8 95		
James H. Cox	50 25		
J. Frank Facey	53 75		
F. Stanhope Hill . . .	11 50		
Lombard & Caustic . .	1,283 63		
The Co-operative Printing Society	60 00		
Wright and Potter Printing Co.	6 50		
		1,601 01	
Stationery and supplies:—			
A. W. Benjamin . . .	$1 60		
Burditt & Bynner . . .	1 25		
Cotton & Gould	328 13		
Gardner Inkstand Co. . .	6 00		
Greenough, Adams & Cushing	19 57		
The Blackbird Pen Co. .	20 50		
The Carter Ink Co. . . .	5 00		
		382 05	
Total			2,847 32
Balance unexpended			$152 68

Street Department (Bridges).

Appropriation			$8,000 00
EXPENDED.			
For Salaries of drawtenders, as per pay-rolls		$3,063 77	
Labor, as per pay-roll		862 74	
Carpentry:—			
W. Fillmore & Co.	$657 20		
Ira G. Hersey	9 43		
		666 63	
Castings and iron work:—			
Barbour, Stockwell Co.	$153 97		
Miller & Shaw	5 75		
		159 72	
Hardware, tools and supplies:—			
Ames Plow Co.	$1 25		
J. Baker & Co.	3 50		
Brock Bros.	20 18		
Burditt & Bynner	241 50		
Dodge, Haley & Co.	29 67		
James Maitland	3 91		
F. A. White	31 45		
		331 46	
Lumber:—			
John S. Clary	$45 71		
Geo. W. Gale Lumber Co.	458 53		
P. S. Huckins & Co.	1,100 81		
Wm. H. Wood & Co.	678 88		
		2,283 93	
Painting, W. J. Edwards		485 40	
Piles, John T. Scully		145 75	
Total			7,999 40
Balance unexpended			60

Street Department (Cleaning).

Appropriation			$24,000 00
EXPENDED.			
For Labor as per pay-rolls		$18,619 21	
Hardware, tools, etc.:—			
Ames Plow Co.	$198 65		
Joseph Breck & Sons	30 00		
Miller & Shaw	4 87		
		233 52	
Amounts carried forward		$18,852 73	$24,000 00

Street Department (Cleaning) — Concluded.

Amounts brought forward		$18,852 73	$24,000 00
Sweepers and repairs:—			
Barbour, Stockwell Co. .	$57 92		
Edson Mfg. Co. . . .	102 37		
Good Road Machine Co. .	9 20		
Hickory Broom Fibre Co. .	3 50		
Chas. Hvass	45 00		
Geo. Tyler & Co. . . .	12 50		
		230 49	
Teaming, as per pay-rolls		4,916 40	
Total			23,999 62
Balance unexpended			38

Street Department (Collection of Ashes).

Appropriation			$20,000 00
EXPENDED.			
For Labor, as per pay-rolls		$16,569 50	
Horses:—			
L. H. Brockway	$225 00		
P. H. Dardis	197 50		
		422 50	
Hay, grain and straw:—			
J. Cushing & Co. . . .	$444 22		
C. F. & G. W. Eddy . .	543 44		
Lord & Webster	650 97		
Merrill & Glazier . . .	343 62		
Geo. G. Wright	424 32		
		2,406 57	
Harness, etc.:—			
James Forgie & Son . .	$93 00		
John H. Fuller	56 70		
Hugh McCaffrey	86 65		
Jos. A. Ryan	8 45		
		244 80	
Horse and wagon covers:—			
George T. Hoyt & Co. . .	$36 00		
Poor & Co.	55 50		
		91 50	
Amounts carried forward		$19,734 87	$20,000 00

Street Department (Collection of Ashes)—Concluded.

Amounts brought forward		$19,734 87	$20,000 00
Horse-shoeing:—			
Wm. Balmer	$22 00		
W. A. Easter	5 00		
		27 00	
Tools, Jos. Breck & Sons		1 50	
Total			19,763 37
Balance unexpended			$236 63

Street Department (Construction).

Boylston Street.

Appropriation			$458 69
EXPENDED.			
For Labor, as per pay-rolls		$233 68	
Bricks, M. W. Sands		225 00	
Total			458 68
Balance unexpended			01

Street Department (Construction).

Eighth Street.

Appropriation			$984 10
Transferred to Paving, Edgestones and Sidewalk . . .			272 65
			$711 45
EXPENDED.			
For Labor as per pay-rolls		$240 17	
Edgestones, S. & R. J. Lombard . . .		169 78	
Gravel, John T. Scully		180 00	
Teaming, as per pay-rolls		121 50	
Total			$711 45

Street Department (Construction).

Eliot Street.

Appropriation		$1,074 05
EXPENDED.		
For Labor as per pay-rolls	$235 25	
Bricks, M. W. Sands	738 12	
Teaming, as per pay-rolls	100 13	
Total		$1,073 50
Balance unexpended		55

Street Department (Construction).

Gravel Bank.

Appropriation		$7,000 00
RECEIVED.		
For Sale of gravel	$6,000 00	
EXPENDED.		
For Land in West Acton, John Gourley and W. B. Mullen		$7,000 00

Street Department (Construction).

Magee Street.

Appropriation			$2,352 00
EXPENDED.			
For Labor as per pay-rolls		$515 00	
Stone:—			
Edgestone, S. & R. J. Lombard	$374 56		
Chip stone, Chas. McMahon	103 40		
Field stone, sundry persons	296 63		
		774 59	
Teaming, as per pay-roll		344 27	
Total			1,633 86
Balance unexpended			$718 14

Street Department (New City Stable, Ward Five).

Appropriation			$30,044 86
EXPENDED.			
For Architect's plans, etc., George Fogerty .		$421 88	
Builder's contract, Mack & Moore . . .		26,303 22	
Carpentry, sheds, etc.:—			
W. Fillmore & Co. . . .	$87 50		
R. Thomas	176 00		
		263 50	
Carriage elevator, C. E. Horn		200 00	
Electric wiring, lamps, etc.:—			
Anchor Electric Co. . .	$30 94		
Gale Carr	36 00		
Inspection of wires . . .	37 50		
John W. Jefferson . . .	46 25		
Pettingell, Andrews Co. .	59 54		
		210 23	
Filling, John Gourley		70 00	
Fire alarm box, U. S. Fire & Pol. Tel. Co.		50 00	
Foundation, Chas. Linehan		368 75	
Hardware, tools and supplies:—			
Ames Plow Co.	44 05		
Brock Bros.	30 67		
Burditt & Bynner . . .	32 92		
Burditt & Williams . . .	200 72		
F. A. White	7 38		
Sundry persons	4 03		
		319 77	
Heating apparatus, Foster & Harvey . .		295 00	
Iron fence, Burditt & Bynner		75 00	
Labor, as per pay-roll		415 48	
Lumber, lime, cement:—			
Geo. W. Gale Lumber Co.	$208 20		
C. E. Horn	7 00		
Wm. H. Wood & Co. . .	32 00		
		247 20	
Mason work, Reuel Thomas		35 00	
Painting, Chas. Traverse		20 00	
Plumbing, E. W. Clark		238 15	
Shades, W. W. Pratt		14 05	
Amounts carried forward		$29,547 23	$30,044 86

Street Department (New City Stable, Ward Five) — Concluded.

Amounts brought forward	$29,547 23	$30,044 86
For Side-track, Fitchburg R. R. Co.	200 00	
Sods, James Shea	79 12	
Stall releasers, Adams & Atkinson	50 00	
Stone, Overseers of the Poor	77 89	
Sundries	6 95	
Water supply, Cambridge Water Works	78 24	
Total		30,039 43
Balance unexpended		$5 43

Street Department (Clay Lands).

Appropriation			42,000 00
Additional appropriation			13,000 00
			$55,000 00

EXPENDED.

For Labor as per pay-rolls		$9,838 50	
Gravel and filling:—			
John Gourley	$26,831 20		
Gravel Bank	6,000 00		
		32,831 20	
Hardware, tools, etc., Ames Plow Co.		236 42	
Land damages, John Kinnear		1,650 00	
Lumber:—			
John S. Clary	$70 94		
Geo. W. Gale Lumber Co.	25 39		
		96 33	
Moving railroad track, Wm. B. Mullen		78 75	
Teaming, as per pay-rolls		8,739 21	
Transportation of filling, Fitchburg Railroad Co.		560 00	
Total			54,030 41
Balance unexpended			$969 59

Street Department (Maintenance).

Appropriation			$70,000 00
Surplus receipts			2,562 00
Transferred from City Clerk Department, Printing Town Records			1,000 00
			$73,562 00

RECEIVED.

For Ashes, filling, scrapings	$1,621 83	
Board of horse	260 00	
Cracked stone	249 30	
Hay	20 00	
Labor and materials, W. E. St. Railway Co.:—		
Resurfacing Webster avenue	6,000 00	
" Brookline street	2,562 00	
Old Crusher, George E. Worthen	200 00	
Rent	33 60	
Sundries	16 19	
Use of steam roller	81 00	
	$11,043 92	

EXPENDED.

For Salaries of			
Supt., Charles A. Brown	$2,000 00		
Clerks:—			
Geo. M. Clukas	1,248 00		
Georgie W. Sanborn	261 50		
Laborers, as per pay-roll	36,790 31		
		40,299 81	
Bicycle tire repairs, Boston Woven Hose Co.		6 76	
Broom stock, A. M. Loker		66 50	
Carriage and wagon repairs:—			
Chapman Carriage Co.	$229 55		
F. Ivers & Son	12 00		
Chas. Waugh & Co.	32 50		
		274 05	
Car tickets, W. E. Street Railway Co.		20 00	
Cash for sundries, C. A. Brown		58 57	
Committee expenses:—			
Carriage hire:—			
Irving Blake	$12 00		
Chas. W. Dailey	10 00		
	$22 00	$40,725 69	$73,562 00

Amounts carried forward

Street Department (Maintenance) — Continued.

Amounts brought forward . .	$22 00	$40,725 69	$73,562 00
For Committee expenses:—			
Carriage hire:—			
J. E. Fabyan	16 50		
Lake & Moynahan . .	9 50		
C. H. Lake	5 00		
Whiting & Smith . . .	3 00		
G. W. Worster . . .	8 00		
Dinners, M. R. Jones . .	69 00		
		133 00	
Expressage		9 75	
Fuel:—			
Baker-Hunnewell Co. . .	$1,380 58		
L. G. Burnham & Co. . .	10 46		
H. Wellington & Co. . .	208 00		
		1,599 04	
Gravel:—			
John McGinnis	$16 50		
T. F. Shaw	13 00		
Josephine E. Stone . . .	480 37		
		509 87	
Hardware, tools and repairs, and supplies:—			
Ames Plow Co.	$118 10		
Brock Bros.	55 66		
Brock & Eaton . . .	9 60		
Burditt & Bynner . . .	102 51		
Burditt & Williams . . .	21 75		
Dodge, Haley & Co. . .	816 50		
F. E. Fitts Mfg. Co. . .	23 80		
Pettingell, Andrews Co. .	22 15		
Daniel J. Sullivan . . .	17 20		
Useful Novelty Co. . . .	28 80		
F. A. White	132 24		
Sundry persons	9 82		
		1,358 13	
Harness and repairs, and horse clothing:—			
Ames Plow Co.	36 00		
Burditt & Bynner . . .	20 35		
W. H. Bustin & Son . .	30 00		
Amounts carried forward . .	$86 35	$44,335 48	$73,562 00

Street Department (Maintenance) — Continued.

Amounts brought forward . .	$86 35	$44,335 48	$73,562 00
For Harness repairs and horse clothing:—			
Jas. Forgie & Son . . .	217 84		
John H. Fuller	85 30		
Hugh McCaffrey	216 66		
Thos. McMahon	98 40		
Jos. A. Ryan	15 25		
		719 80	
Hay, grain, etc.:—			
Geo. H. Cheever	$10 50		
J. Cushing & Co. . . .	706 58		
W. A. Haynes & Co. . .	55 69		
Hosmer, Robinson & Co. .	184 72		
Leavitt, Sanborn & Co. .	480 61		
Lord & Webster	2,219 66		
Merrill & Glazier . . .	446 40		
Scott & Bridge	258 83		
L. G. Stone & Co. . . .	52 50		
H. H. Turner	248 54		
Geo. G. Wright	1,391 88		
		6,055 91	
Horses:—			
L. H. Brockway	$345 00		
P. H. Dardis	167 50		
		512 50	
Horse clipping, Richdale Ave. Stables . .		6 00	
Horse shoeing		5 58	
Lighting, Cambridge Electric Light Co. .		246 44	
Lights, Anchor Electric Co.		9 15	
Office expenses:—			
Advertising	$7 09		
Directories:—			
E. F. Hunt & Co. . .	$9 00		
Sampson, Murdock & Co.	5 00		
Document boxes, Seavey Mfg. Co.	32 50		
Examination of title, Wm. V. Thompson	35 00		
Photographs, W. H. Lertora	10 00		
Amounts carried forward . .	$98 59	$51,890 86	$73,562 00

Street Department (Maintenance) — Continued.

Amounts brought forward . .	$98 59	$51,890 86	$73,562 00
For Office expenses:—			
Stationery, printing, typewriter supplies:—			
Brooks Bank Note Co. .	12 00		
Camb. Chronicle Co. .	55 70		
Cotton & Gould . . .	143 86		
James H. Cox	35 75		
Lombard & Caustic . .	16 75		
Stationery department .	57 33		
Sundries for office . .	14 75		
		434 73	
Oils, paints, etc.:—			
A. W. Chesterton & Co. .	31 00		
Kimball, Freed & Co . .	67 04		
Manufacturers Oil and Grease Co.	71 58		
Mass. Oil Co.	7 50		
A. N. Reynolds & Co. . .	40 45		
Standard Oil Co. . . .	46 48		
		264 05	
For Pumping pit at City Stable Yard, D. W. De Rosay		275 00	
Rent of wharf, Cambridge Gas Light Co. .		288 37	
Signs, Hill Street Sign Co.		7 00	
Stable repairs and supplies:—			
Automatic feeders, E. L. Cook	$65 00		
Carpentry, W. Fillmore & Co.	296 35		
Furnace work, etc., Moynahan & Co.	30 26		
Lumber, cement:—			
John S. Clary	158 00		
Geo. W. Gale Lumber Co.	211 23		
Wm. H. Wood & Co. .	42 55		
Mason work, Reuel Thomas	411 96		
Mill work, Ira G. Hersey	19 85		
Amounts carried forward . .	$1,235 20	$53,160 01	$73,562 00

Street Department (Maintenance) — Continued.

Amounts brought forward . .	$1,235 20	$53,160 01	$73,562 00
For Stable repairs and supplies:—			
Repairing bags, Mrs. Farry	11 45		
Salt, Chas. L. Davenport .	15 00		
Soap, etc.:—			
Jas. Forgie & Son . .	9 17		
Rust & Richardson Drug Co.	17 42		
Sponge, F. A. White . .	30 88		
Sundry supplies:—			
A. C. Curtis	19 22		
F. P. Merrill	11 35		
Sundry persons . . .	4 25		
		1,353 94	
Stone:—			
Mass. Broken Stone Co. .	$1,175 23		
Sundry persons (field stone)	11,260 16		
W. E. Street Railway Co.	25 20		
		12,460 59	
Steam roller repairs and supplies:—			
Barbour, Stockwell Co. .	60 14		
Boston Woven Hose Co. .	45 13		
Wm. H. Gallison . . .	35 11		
Gould Packing Co. . . .	10 27		
J. H. Houghton	9 05		
Geo. T. Hoyt & Co. . .	40 00		
The O. S. Kelly Co. . .	4 00		
Edw. Kendall & Sons . .	30 25		
Knowlton Packing Co. .	2 66		
Miller & Shaw	92 46		
Water Works Department	72 08		
		401 15	
Stone crusher (new):—			
C. Aultman & Co. . . .	$1,130 48		
Freight, Fitchburg R. R. Co.	69 52		
		1,200 00	
Amounts carried forward		$68,575 69	$73,562 00

Street Department (Maintenance) — Concluded.

Amounts brought forward		$68,575 69	$73,562 00
For Stone crusher repairs and supplies:—			
Barbour, Stockwell Co. .	$85 35		
L. S. Bartlett	6 72		
Wm. J. Bellis	9 66		
Boston Belting Co. . .	178 47		
Boston Fire Proof Covering Co.	40 00		
Boston Woven Hose Co. .	6 38		
Wm. Campbell & Co. . .	10 29		
John S. Clary	144 27		
W. Fillmore & Co. . . .	538 71		
Geo. W. Gale Lumber Co.	203 82		
Wm. H. Gallison . . .	19 69		
Gould Packing Co . . .	3 90		
J. H. Houghton . . .	687 99		
P. S. Huckins & Co. . .	12 00		
Knowlton Packing Co. .	4 22		
Edw. Kendall & Sons . .	264 28		
Thos. Leahy & Sons . .	79 93		
Miller & Shaw	162 96		
S. C. Nightingale & Childs.	25 92		
Patrick Rowe	6 72		
M. N. Stearns	55 75		
Steele & Condict . . .	95 73		
Taylor Iron and Steele Co.	248 08		
Reuel Thomas	30 00		
A. J. Wellington . . .	112 99		
Wm. H. Wood & Co. . .	31 52		
		3,065 35	
Teaming, sundry persons		1,148 17	
Telephone rent and tolls		438 76	
Use of buggy, Chas. Waugh & Co. . .		9 50	
Use of horse, P. H. Dardis		14 00	
Wagon scale, Priest, Page & Co. . . .		230 25	
Work on flag-staffs, David Cass		47 67	
Total			73,529 39
Balance unexpended			$32 61

Street Department (Paving).

Edgestones and Sidewalks.

Appropriation			$37,500 00
Additional Appropriations			20,409 84
			$57,909 84
RECEIVED.			
For Edgestone and sidewalk assessments		$19,332 15	
Labor and materials		602 30	
		$19,934 45	
EXPENDED.			
For Labor, as per pay-rolls		$19,603 54	
Artificial stone sidewalks:—			
W. A. Murtfeldt	$57 87		
Simpson Bros.	1,013 15		
		1,071 02	
Bricks, M. W. Sands		13,717 50	
Edgestones and circles, S. and R. J. Lombard		10,718 58	
Freight and loading gravel from bank at Acton:—			
Fitchburg Railroad	$1,384 00		
John Gourley	227 62		
Wm. B. Mullen	235 83		
		1,847 45	
Granite flagging, S. & R. J. Lombard		1,013 31	
Gravel:—			
James Gray	$108 69		
John McGinness	47 50		
Josephine E. Stone	11 75		
		167 94	
Gutter and round stone:—			
S. & R. J. Lombard	$3,741 42		
W. E. Street Railway Co.	446 59		
		4,188 01	
Hardware, tools, etc.:—			
Ames Plow Co.	$83 86		
Jos. Breck & Sons	113 40		
Brock Bros.	5 26		
Amounts carried forward	202 52	$52,327 35	$57,909 84

Street Department (Paving) — Concluded.

Edgestones and Sidewalks.

Amounts brought forward . .	$202 52	$52,327 35	$12,000 00
For Hardware, tools, etc.: —			
Burditt & Bynner . . .	19 20		
Dodge, Haley & Co. . .	13 10		
W. G. Hallock	5 50		
James Maitland	50 00		
Standard Oil Co. . . .	46 57		
Union Glass Co.	40 65		
Bruce R. Ware & Co. . .	6 60		
F. A. White	2 45		
		386 59	
Lumber, cement, etc.: —			
John S. Clary	$89 54		
Geo. W. Gale Lumber Co.	17 45		
Wm. H. Wood & Co. . .	33 59		
		140 58	
Paving, Soule, Dillingham & Co. . . .		147 75	
Rebates on sidewalk assessments: —			
Frank Lerner.	5 67		
Geo. P. O'Brien	12 37		
		18 04	
Teaming, as per pay-rolls		4,797 15	
Total			57,817 46
Balance unexpended			$92 38

Street Department (Paving).

Sidewalks around Public Library.

Appropriation			$2,500 00
EXPENDED.			
For Labor, as per pay-rolls		$667 29	
Bricks, M. W. Sands		685 00	
Edgestone, S. & R. J. Lombard		1,004 00	
Teaming, as per pay-rolls		142 88	
Total			2,499 17
Balance unexpended			83

Street Department (Massachusetts Avenue).

Appropriation			$40,000 00
EXPENDED.			
For Labor as per pay-rolls		$11,217 60	
Ballast stone, Wm. J. McCarthy		11,023 09	
Edgestone and circles, S. & R. J. Lombard		1,743 60	
Field and cobble stones:—			
Fitchburg R. R. Co.	$205 24		
Sundry persons	7,575 99		
		7,781 23	
Flagging and gutter stones, S. & R. J. Lombard		1,124 23	
Freight and loading field stone:—			
P. J. Curley	$132 68		
Fitchburg R. R. Co.	168 00		
		300 68	
Labor, H. H. Eames		30 00	
Loading gravel, Wm. B. Mullen		22 12	
Lumber, Geo. W. Gale Lumber Co.		9 38	
Stationery, Cotton & Gould		9 75	
Teaming, as per pay-rolls		6,602 80	
Weighing ballast stone, Thos. Gurnham		135 47	
Total			39,999 95
Balance unexpended			05

Street Department (Watering).

Appropriation			$26,000 00
RECEIVED.			
For Assessments		$15,160 19	
Collections		1,080 55	
		$16,240 74	
EXPENDED.			
For Salary of Superintendents:—			
Charles McHugh	$504 00		
M. J. Donlan	235 00		
		$739 00	
Amounts carried forward		$739 00	$26,000 00

Street Department (Watering) — Concluded.

Amounts brought forward		$739 00	$26,000 00
Bicycle repairs, J. L. Moseley		13 00	
Clerical assistance		157 00	
Hardware, springs etc:—			
Boston Woven Hose Co. .	$144 87		
Dodge, Haley & Co. . .	371 73		
Duff Spring Co.	320 70		
Wm. H. Gallison Co. . .	40		
F. A. White	23 11		
		860 81	
Labor, repairing and painting carts . .		1,360 25	
Lumber, etc.:—			
Geo. W. Gale Lumber Co.	76 20		
Ira G. Hersey	8 14		
Henry J. Winde	117 38		
		201 72	
New tanks and attachments:—			
J. L. & H. K. Potter . .	$434 75		
Charles Waugh & Co. . .	275 55		
		710 30	
Paints, oil etc.:—			
Burditt and Bynner . .	$348 35		
Wadsworth, Howland & Co.	8 93		
		357 28	
Sprinkling by contract, sundry persons .		21,364 67	
Stand pipe repairs, Water Works . . .		81 80	
Stationery, Cotton & Gould		7 50	
Total			25,853 33
Balance unexpended			$146 67

Treasury Department.

Appropriation			$14,500 00
RECEIVED.			
For fees from sundry persons		$2,407 85	
EXPENDED.			
For Salaries of			
City Treasurer, W. W. Dallinger	$3,000 00		
Amounts carried forward . . .	$3,000 00		$14,500 00

Treasury Department — Continued.

Amounts brought forward . .	$3,000 00		$14,500 00
For Salaries of Clerks:—			
E. G. Stevens	1,408 50		
E. J. Howlett	1,252 00		
J. Henry Webber . . .	1,043 34		
Chas. H. Dodge	939 00		
Philip B. Dallinger . . .	626 00		
Lizzie E. Estes	782 50		
Temporary clerks . . .	850 65		
		$9,901 99	
Advertising:—			
Cambridge Chronicle Co. .	$260 01		
Boston Daily Advertiser .	40 50		
		300 51	
Carriage-hire, M. J. Fairbanks		573 00	
Car-tickets, W. E. St. Railway Co. . . .		35 00	
Commissions for collecting taxes:—			
Joseph Fox	$639 03		
Geo. H. Lambert . . .	115 50		
Warren Ivers	799 81		
		1,554 34	
Directories:—			
W. A. Greenough & Co. .	3 00		
E. F. Hunt & Co. . . .	3 00		
Sampson, Murdock & Co.	5 00		
		11 00	
Postage, F. M. Small		1,357 10	
Recording deeds, Edwin O. Childs . . .		14 70	
Stationery and printing:—			
American Bank Note Co. .	$45 00		
Cambridge Chronicle Co. .	8 00		
Cotton & Gould	120 65		
James H. Cox	274 50		
John H. Ford	7 00		
Lombard & Caustic . .	7 96		
Stationery department . .	36 34		
		499 45	
Amounts carried forward		$14,247 09	$14,500 00

Treasury Department — Concluded.

Amounts brought forward		$14,247 09	$14,500 00
For Subscriptions:—			
F. L. Beunke	$6 00		
J. S. Daggett	1 00		
		7 00	
Telephone rent		150 00	
Tools and repairs:—			
L. W. Poole	$8 20		
J. W. Williams	3 25		
		11 45	
Total			14,415 54
Balance unexpended			$84 46

Water Works (Construction).

Appropriation			$12,500 00
RECEIVED.			
For Gravel		$84 45	
Iron		23 12	
Materials		15 75	
Pipe		216 11	
		$339 43	
EXPENDED.			
For Labor, as per pay-rolls		$3,088 50	
Advertising, Boston Daily Advertiser		14 25	
Bonds, American Bank Note Co.		48 00	
Car tickets, W. E. Street Railway Co.		25 00	
Drain work, Samuel McCulloch		32 13	
Fittings, castings, etc.:—			
Barbour, Stockwell Co.	$27 35		
Davis & Farnum Mfg. Co.	21 33		
The A. P. Smith Mfg. Co.	105 00		
John Wilson & Son	14 64		
		168 32	
Fountains, Henry F. Jenks		1,260 00	
Freight, Owners of J. Howell Leeds		380 75	
Lead, Chadwick Lead Works		848 70	
Lumber, George W. Gale Lumber Co.		35 13	
Mason work, M. N. Stearns		53 56	
Amounts carried forward		$5,954 34	$12,500 00

Water Works (Construction) — Concluded.

Amounts brought forward		$5,954 34	$12,500 00
For Meters:—			
Hersey Mfg. Co. . . .	$498 00		
National Meter Co. . .	41 80		
Neptune Meter Co. . . .	244 60		
		784 40	
Pipe:—			
McNeal Pipe & Foundry Co.	$3,611 65		
Warren Foundry Co. . .	396 09		
The Geo. Woodman Co. .	286 25		
		4,293 99	
Sundries		9 19	
Teaming, Chas. McMahon		226 85	
Tools, Dodge, Haley & Co.		15 60	
Total			11,284 37
Balance unexpended			$1,215 63

Water Works (Construction).

Fresh Pond Reservoir.

Appropriation			$17,500 00
EXPENDED.			
For Labor as per pay-rolls		$10,381 50	
Landscape architect:—			
French & Bryant . . .	$154 00		
Olmsted, Olmsted & Eliot	1,209 10		
F. L. & J. C. Olmsted .	995 52		
		2,358 62	
Lumber, cement:—			
Geo. W. Gale Lumber Co.		35 10	
Pipe, D. W. Lewis		430 56	
Plants:—			
Wm. F. Bassett & Son .	$43 25		
Wm. Harrison & Sons .	13 00		
F. H. Horsford	49 00		
Amounts carried forward . .	$105 25	$13,205 78	$17,500 00

Water Works (Construction)— Concluded.

Fresh Pond Reservoir.

Amounts brought forward . .	$105 25	$13,205 78	$12,500 00
For Plants:—			
Peter McPhee	63 00		
Shady Hill Nurseries . .	27 00		
T. R. Watson	41 30		
Wm. H. Wyman . . .	43 00		
		279 55	
Repairing bicycle, M. A. Carpenter . .		10 40	
Repairing tools, James Maitland . . .		7 21	
Services of Civil Engineers:—			
Geo. S. Rice and Geo. E. Evans . . .		209 00	
Signs, Chas. A. Sawyer		15 00	
Stone, Mass. Broken Stone Co.		262 85	
Sundries		22 68	
Tools, hardware, Ames Plow Co. . . .		71 36	
Teaming as per pay-rolls		2,851 67	
Valves, Chapman Valve Mfg. Co. . . .		37 24	
Total			16,972 74
Balance unexpended			$527 26

Water Works (Construction).

Hobbs Brook Reservoir.

Appropriation			$400,000 00
RECEIVED.			
For Forfeit for contract not accepted, John McDonald		$200 00	
Interest		43 40	
Premuim on bonds		7,672 00	
Produce		139 60	
Stenography		50 05	
Sundries		8 50	
Trees		250 00	
		$8,363 55	
Amount carried forward			$400,000 00

Water Works (Construction) — Continued.

Hobbs Brook Reservoir.

Amount brought forward			$400,000 00
EXPENDED.			
For Advertising:—			
Boston Daily Advertiser .	31 50		
Boston Herald Co. . . .	27 00		
Cambridge Chronicle Co. .	8 59		
James Cox	19 50		
F. S. Hill	6 00		
		92 59	
Appraising:—			
Robt. E. Glancy	20 00		
J. L. Nason & Co. . . .	200 00		
		220 00	
Blasting, Frank X. Saucier		2,977 49	
Board and care of employees			
at Mass. General Hospital .	76 00		
Waltham Hospital . . .	638 06		
		$714 06	
Building house Robt. E. Glancy		1,425 00	
Carriage hire, Grafton E. Kirwin . . .		658 55	
Car-tickets, Fitchburg R. R. Co. . . .		12 00	
Cash expended for sundries:—			
W. H. Harding . . .	3 50		
L. M. Hastings	6 80		
W. H. Tuck	30 95		
L. B. Vaughan	5 85		
		47 10	
Contracts for excavating:—			
Jos. D. Gennaro	$12,047 97		
T. W. Kinser & Sons . .	222,319 01		
Auguste Saucier	9,794 16		
Frank X. Saucier . . .	40,408 59		
Standard Construction &			
Supply Co.	29,106 55		
		313,676 28	
Copies of legal paper, Middlesex County .		52 00	
Examination of titles, Wm. V. Thompson		22 00	
Amounts carried forward		$319,897 07	$400,000 00

Water Works (Construction) — Continued.

Hobbs Brook Reservoir.

Amounts brought forward		$319,897 07	$400,000 00
For Executions of Court:—			
County Commissioners .	$34 76		
Geo. G. Fuller	12,706 02		
Chas. F. Smith	9,485 34		
		22,226 12	
Fuel, lime, cement, etc., G. F. Frost . .		149 44	
Gate-house, M. N. Stearns		3,375 00	
Hardware, tools and repairs, fittings:—			
J. A. Higgins	$26 32		
T. W. Kinser & Sons . .	16 80		
Perrin, Seamans & Co. .	52 64		
		95 76	
Hay, grain:—			
T. W. Kinser & Sons . .	16 90		
Geo. B. Pope & Co. . .	62 48		
		79 38	
Horse blanket, Peter Perry		6 00	
Horse-shoeing, P. Larkin		15 25	
Inspection of Works:—			
Barge hire:—			
Wm. F. Colby . . .	$8 00		
Elliott & Duvey . . .	8 00		
John Nixon	61 00		
Boutonnieres, P. O'Brien & Son	7 50		
Carriage hire:—			
J. Callahan	16 00		
Richdale Ave. Stables .	6 00		
Cigars:—			
B. P. Clark.	19 50		
Holderer & Macdonald .	12 00		
Dinners and lunches:—			
C. C. Butler	393 85		
M. R. Jones	429 00		
Postals, Thorp & Martin Co.	2 00		
Printing, Cambridge Chronicle Co.	28 25		
Amounts carried forward . .	$991 10	$345,844 02	$400,000 00

Water Works (Construction) — Continued.

Hobbs Brook Reservoir.

Amounts brought forward . .	$991 10	$345,844 02	$400,000 00
For Inspection of Works:—			
Services, Daggett's Orchestra	31 20		
Special cars, Newton & Boston St. Ry. Co. . .	12 00		
Transportation, Fitchburg R. R. Co.	10 50		
		1,044 80	
Iron, Smith-Carlton Iron Co.		10 35	
Insurance, T. H. Raymond		38 50	
Labor, as per pay-roll		14,106 76	
Labor, W. H. Wooley		11 75	
Land and damage:—			
Chas. H. Browne . . .	$2,423 78		
Est. of Chas. H. Dabney .	850 00		
Bridget M. Roach . . .	10,500 00		
Chas. L. Smith	9,000 00		
Samuel Stewart	900 00		
		23,673 78	
Lumber and milling:—			
Buttrick Lumber Co. . .	$103 62		
Libby & Larcom . . .	6 82		
		110 44	
Moving goods, M. I. W. McDonald . .		4 00	
Pipe, Davis & Farnum Mfg. Co. . . .		34 65	
Plans and specifications, C. H. Bartlett .		103 50	
Plumbing, Taylor & Percival		24 70	
Rain gauge, Henry J. Green		5 00	
Removing night soil, Totten Bros. . . .		10 00	
Repairs, Robt. E. Glancy		39 27	
Retaining fee, Marshall C. Baldwin . .		25 00	
Roof repairs, National Roofing Co. . . .		58 05	
Rubber boots, Jas. M. W. Hall		9 50	
Serving notices:—			
John A. Tolman	$17 70		
Walter C. Wardwell . .	32 20		
		49 90	
Amounts carried forward		$385,203 97	$400,000 00

Water Works (Construction) — Continued.

Hobbs Brook Reservoir.

Amounts brought forward		$385,203 97	$400,000 00
For Services of experts, etc.:—			
C. S. Bruce	$40 00		
E. C. Bumpus	30 00		
Arthur L. Coburn . . .	30 00		
Wm. B. Durant	350 00		
Clarence F. French . . .	78 00		
S. S. Gleason	100 00		
A. Greenwood, M.D. . .	905 00		
J. L. Hildreth, M.D. . .	582 61		
Daniel F. Hutchinson . .	27 00		
Fred W. Jackson, M.D. .	840 00		
Henry J. Jennison . . .	60 00		
Arthur H. Jewett . . .	10 00		
Shattuck & Munroe . .	910 00		
Leonard A. Saville . . .	20 00		
Wm. T. Sedgwick . . .	2,500 00		
E. P. Smith	212 00		
E. E. Spencer, M.D. . .	300 00		
J. O. Tilton, M.D. . . .	865 00		
Walter Wellington . . .	15 00		
		7,874 61	
Services of city solicitor		2,100 00	
Services of city engineer		2,000 00	
Sluice gates, Coffin Valve Co.		200 00	
Steel circles, etc., Coffin Valve Co. . . .		15 21	
Stationery and printing:—			
Cambridge Chronicle Co. .	$16 89		
Co-operative Printing Soc.	6 75		
John H. Ford	19 50		
Frost & Adams Co. . . .	37 27		
J. W. Pitman & Son . .	9 50		
Thorp & Martin Co. . .	4 75		
		94 66	
Stenography and typewriting:—			
Margaret M. Eccles . . .	$50 00		
Edith M. Johnson . . .	84 56		
		134 56	
Amounts carried forward		$397,623 01	$400,000 00

Water Works (Construction) — Concluded.

Hobbs Brook Reservoir.

Amounts brought forward	$397,623 01	$400,000 00
For Stone, Jas. B. Wentworth	200 00	
Stone work, J. M. Folschids	44 43	
Sundries	18 33	
Teaming, etc., Geo. Flint	150 00	
Telephone rent and tolls	93 25	
Use of transit, City of Waltham	20 00	
Water basins, Geo. A. Flagg	38 50	
Total		$398,187 52
Balance unexpended		$1,812 48

Water Works (Payson Park Reservoir).

Appropriation		$75,000 00
RECEIVED.		
For Labor and materials	$202 58	
Old iron	111 58	
Premium on bonds	3,000 00	
Stone	5 00	
Transit	150 00	
	$3,469 16	
EXPENDED.		
For Labor as per pay-rolls	$2,797 72	
Advertising, Boston Herald Co.	9 37	
Air pump, N. Y. Air Pump Co.	125 00	
Alterations at Fresh Pond Pumping Station, C. E. McKinnon	3,000 00	
Bricks:—		
N. M. Cofran & Co. $52 00		
Parry Bros. & Co. 63 00		
	115 00	
Carpentry:—		
W. H. Norris $5 93		
C. E. McKinnon 1,725 00		
	1,730 93	
Amounts carried forward	$7,778 02	$75,000 00

Water Works (Payson Park Reservoir)—Continued.

Amounts brought forward		$7,778 02	$75,000 00
For Cash expended for sundries:—			
E. C. Brooks (traveling ex. and telegrams) . . .	$11 68		
J. M. W. Hall (traveling expenses)	55 66		
		67 34	
Cement, sand, Waldo Bros.		195 10	
Drain work, Samuel McCulloch . . .		139 75	
Electric work, F. Bryant & Co.		239 44	
Expressage:—			
Hatch & Co.	$8 15		
Savage & Son	38 76		
		46 91	
Freight, Fitchburg R. R. Co.		524 99	
Glazing, Chas. A. Sawyer		6 50	
Gleaner, I. B. Davis & Son		415 50	
Gravel, John Gourley		6 24	
Hardware, tools, repairs and supplies:—			
American Steam Gauge Co.	$9 00		
Boston Woven Hose Co. .	38 73		
Chadwick Lead Works .	6 18		
Chapman Valve Mfg. Co. .	135 95		
Davis & Farnum Mfg. Co.	631 61		
Dodge, Haley & Co. . .	49 42		
J. E. Lonergan & Co. . .	24 29		
Miller & Shaw	7 64		
Siebert Cylinder Oil Cup Co.	8 00		
Walworth Mfg. Co. . .	1,640 21		
		2,551 03	
Heater support, Chelmsford Foundry Co.		68 00	
Iron beams, G. W. & F. Smith Iron Co. .		155 00	
Lead cable laid from P. P. Res. to Camb. Pump. Station, The Safety Insulated Wire and Cable Co.		1,056 48	
Lumber, Geo. W. Gale Lumber Co. . .		26 38	
Lunch for employees, M. R. Jones . . .		6 00	
Amounts carried forward		$13,282 68	$75,000 00

Water Works (Payson Park Reservoir)—Continued.

Amounts brought forward		$13,282 68	$75,000 00
For Magnesia coverings for pipes, S. C. Nightingale & Childs		249 44	
Mason work, M. N. Stearns		16 00	
Meter, Builders' Iron Foundry		2,125 00	
Oil, W. A. Wood & Co.		41 63	
Packing, A. W. Chesterton & Co. . . .		32 12	
Painting, glazing, Chas. A. Sawyer . .		18 78	
Pipe, fittings, etc.:—			
Barbour, Stockwell Co. .	$126 73		
Alfred Box & Co. . . .	75 00		
Davis & Farnum Mfg. Co. .	331 95		
E. & T. Fairbanks & Co. (testing)	26 50		
Edw. Kendall & Sons . .	428 32		
D. W. Lewis	13 50		
Walworth Mfg. Co. . . .	39 52		
		1,041 52	
Pumping engine, Groshon High Duty Pumping Engine Co.		18, 053 34	
Services of Civil Engineers, Geo. S. Rice Geo. E. Evans		1,000 00	
Services of mechanical engineers:—			
Alphonse Fteley	250 00		
E. D. Leavitt	4,411 84		
		4,661 84	
Services of police officer Frank Chant, chief, Town of Belmont		12 50	
Smoke boxes, flues etc., for boilers at F. P. Pump St., Robert Iron Works Co. . .		1,335 00	
Stock and labor on boilers at F. P. Pump Sta. Lake Erie Boiler Works		7,767 63	
Stone:—			
John J. Cuddihy	80 00		
Overseers of the Poor . . .	14 91		
		94 91	
Stone work, John Mc.Namee's Sons . .		46 00	
Sundries		26 75	
Teaming, as per roll		80 80	
Amounts carried forward		$49,885 94	$75,000 00

Water Works (Payson Park Reservoir) — Continued.

Amounts brought forward		$49,885 94	$75,000 00
For Use of derrick and engine, Alice E. Cram		20 77	
Valves, Coffin Valve Co.		1,300 65	
Total of regular expenses,		$51,207 36	
For Completion of reservoir:—			
Labor, as per pay-roll		5,594 34	
Advertising, Boston Herald Co.		5 12	
Air valves, Coffin Valve Co.		59 00	
Analysis of water, Stephen P. Sharples		10 00	
Asphalt:—			
Simpson Bros.	$1,074 48		
R. D. Upham	2,581 96		
		3,656 44	
Beams, Chelmsford Foundry Co.		15 50	
Bronze tablet, Ames Mfg. Co.		185 00	
Carriage hire, Whiting & Smith		6 00	
Car tickets, W. E. Street Railway Co.		25 00	
Cash expended for sundries, L. M. S. Horton		6 63	
Floats, A. T. Stearns Lumber Co.		61 00	
Gate house:—			
S. J. Kelley	$165 40		
Norcross Bros.	2,600 00		
		2,765 40	
Hardware, tools and repairs, and supplies:—			
Ames Plow Co.	14 61		
Burditt & Bynner.	17 25		
		31 86	
Horse board, Whiting & Smith		44 00	
Hose, Boston Woven Hose Co.		16 06	
Iron fence, Van Dorn Iron Works Co.		1,945 08	
Iron work, Miller & Shaw		29 20	
Lawn seeds:—			
R. & J. Farquhar & Co.	$14 55		
Schlegel & Fottler	56 92		
		71 47	
Pipe, D. W. Lewis		9 60	
Railing and posts, T. F. McGann		125 00	
Amounts carried forward		$14,661 70	$75,000 00

Water Works (Payson Park Reservoir) — Concluded.

Amounts brought forward		$14,661 70	$400,000 00
For Completion of Reservoir:—			
Slope paving, R. A. Malone		1,140 00	
Sods, James Gray		855 89	
Stone:—			
S. & R. J. Lombard (granite coping)	$236 28		
Mass. Broken Stone Co.	36 38		
Martin McNulty (field)	12 60		
Payson Park Land Co.	11 98		
		297 24	
Stone work:—			
Austin Ford & Son (platform)	$135 80		
John McNamee's Sons	14 00		
		149 80	
Strainer, Barbour, Stockwell Co.		168 75	
Sundries		19 10	
Teaming, as per pay-roll		2,159 60	
Use of rails and cars, Chas. A. Trumbull		100 80	
Expenses of eompleting reservoir		$19,552 88	
Total of regular expenses		51,207 36	
Total			$70,760 24
Balance unexpended			$4,239 76

Water Works (Maintenance, General).

Appropriation		$27,000 00
RECEIVED.		
For Grass	$100 00	
Hay	225 00	
Iron	846 98	
Labor and materials	2,113 05	
Old pipe	10 90	
Skips	133 00	
Wood	46 00	
	$3,474 93	
Amount carried forward		$27,000 00

Water Works (Maintenance) — Continued.

Amount brought forward			$27,000 00
EXPENDED.			
For Salaries of			
Acting Supt., E. C. Brooks	$1,000 00		
Asst. Supt., Charles B. Parker	1,250 00		
Treasurer of Sinking Funds, Wm. W. Dallinger	200 00		
Inspectors:—			
F. G. Davis	900 00		
C. E. McGuire . . .	780 00		
Mechanic, B. P. Doe . .	1,048 57		
Laborers, as per pay-roll .	11,354 14		
		$16,532 71	
Badges, A. W. Mitchell Mfg. Co. . . .		12 00	
Bicycle repairs, J. L. Moseley		11 30	
Binding, J. H. H. McNamee		5 00	
Carpentry, S. J. Kelly		384 48	
Carriage and wagon repairs:—			
Chapman Carriage Co. .	$99 65		
Lussier & Bonin . . .	11 85		
Hugh Stewart & Co. . .	23 90		
Chas. Waugh & Co. . .	14 27		
		149 67	
Car tickets:—			
Fitchburg R. R. Co. . .	$81 54		
W. E. Street Railway Co.	150 00		
		231 54	
Cash expended:—			
E. C. Brooks	$26 74		
C. B. Parker	7 64		
		34 38	
Drain work:—			
Jas. D. Hill	$51 03		
Samuel McCulloch . . .	40 03		
		91 06	
Enamel black, Robt. W. Neff		28 05	
Amounts carried forward		$17,480 19	$27,000 00

Water Works (Maintenance, General) — Continued.

Amounts brought forward		$17,480 19	$27,000 00
For Expressage:—			
Dodge's Express Co. . .	$37 92		
Hatch & Co.	4 10		
Savage & Son	23 72		
		65 74	
Express bag, Sage's Trunk Depot . . .		5 00	
Fuel, Coleman Bros.		17 50	
Gas, Cambridge Gas Light Co.		20 23	
Hardware, tools, machinery and repairs:—			
Ames Plow Co.	$15 93		
Burditt & Bynner . . .	126 79		
J. G. Chase	9 00		
Chandler & Farquhar . .	16 29		
Chapman Valve Mfg. Co. .	65 73		
Walter W. Field . . .	89 57		
Chas. H. Goldsmith . .	5 80		
Ludlow Valve Mfg. Co. .	128 81		
James Maitland	197 68		
Norwood Engineering Co.	13 40		
Standard Brass Co.	6 03		
Walworth Mfg. Co. . .	139 12		
F. A. White	68 66		
Sundry persons	16 74		
		899 54	
Harness and repairs, etc.:—			
M. Cavanagh	$186 75		
Jos. Forgie & Son . . .	4 50		
		191 25	
Hay, grain:—			
J. Cushing & Co. . . .	$448 24		
Patrick Glennon . . .	26 00		
		474 24	
Horse, P. H. Dardis		125 00	
Horse-shoeing:—			
Wm. Bell	$13 75		
John F. Gurry	73 50		
Thos. Smith	223 25		
		310 50	
Amounts carried forward		$19,589 19	$27,000 00

Water Works (Maintenance, General) — Continued.

Amount brought forward		$19,589 19	$27,000 00
For Hose and packing, Boston Woven Hose Co.		89 33	
Ice:—			
Boston Ice Co.	$11 40		
Fresh Pond Ice Co. . .	64 60		
		76 00	
Inspection of Water Works:—			
Carriage hire, John Nixon	$12 00		
Dinners, Colonial Club .	51 05		
		63 05	
Lumber, lime, cement, Geo. W. Gale Lumber Co.		62 49	
Meters and repairs:—			
National Meter Co. . . .	$11 35		
Union Water Meter Co. .	56 87		
Henry R. Worthington .	12 28		
Sundry persons	5 25		
		85 75	
Oil, Standard Oil Co.		52 41	
Packing, Hinckley Bros. & Co.		7 88	
Painting, papering, Chas. A. Sawyer . .		53 75	
Payments in accordance with Acts of 1893, Chapter 352:—			
City of Waltham . . .	$1,141 50		
Town of Belmont . . .	520 31		
Lincoln	283 95		
Lexington	270 09		
Weston	119 00		
		2,334 85	
Pipe and fittings:—			
Davis & Farnum Mfg. Co.	$24 58		
Walworth Mfg. Co. . .	68 13		
The Geo. Woodman Co. .	196 39		
		289 10	
Pipe bridge, Metropolitan Water Board .		37 50	
Plumbing:—			
Brock Bros.	$7 27		
Levi Hawkes	94 58		
		101 85	
Amounts carried forward		$22,843 15	$27,000 00

Water Works (Maintenance, General) — Concluded.

Amounts brought forward		$22,843 15	$27,000 00
For Rent of box, Cambridge Safe Deposit Co.		20 00	
Rent of office, shop, etc., at City Hall, City of Cambridge		2,000 00	
Roof repairs, John J. Blevins		6 12	
Services of electrical expert, Chas. H. Morse		200 00	
Sleigh, Ames Plow Co.		36 00	
Stationery, printing, etc.:—			
Blackbird Pen Co. . . .	$5 00		
Brook Bank Note Co. . .	24 00		
Cambridge Chronicle Co. .	144 37		
Thorp & Martin Co. . .	233 78		
Sundry persons	11 65		
		418 80	
Subscriptions:—			
Engineering News Pub. Co.	$5 00		
Water & Gas Review Pub. Co.	2 00		
		7 00	
Sundry supplies:—			
J. A. Holmes	$5 04		
Sundry persons	25 41		
		30 45	
Teaming, sundry persons		71 87	
Telephone rent and tolls.		256 95	
Testing pipe:—			
Chas. F. Borland . . .	$28 00		
John W. Wood, Jr. . . .	32 00		
		60 00	
Use of horses and wagons:—			
F. D. Bartlett	$69 50		
Hugh Stewart & Co. . .	16 50		
		86 00	
Total			26,036 34
Balance unexpended			$963 66

Water Works (Maintenance, Office).

Appropriation			$5,700 00
EXPENDED.			
For Salaries of			
Water Registrar, Walter H. Harding	$2,200 00		
Office Clerks, H. L. Lincoln	1,200 00		
H. F. Milligan	785 00		
G. K. Dame	576 00		
M. M. Robbins	576 00		
		$5,337 00	
Car tickets, W. E. St. Railway Co.		75 00	
Directories, Sampson, Murdock & Co.		5 00	
Stationery and printing:—			
Cambridge Chronicle Co.	$45 55		
Cotton & Gould	53 25		
Geo. H. Richter & Co.	5 00		
Thorp & Martin Co.	82 55		
		186 35	
Subscriptions, F. L. Beunke		6 00	
Sundries		25 18	
Total			$5,634 53
Balance unexpended			$65 47

Water Works (Maintenance, Pumping).

Appropriation			$17,500 00
Transferred to Rates, Fines, etc., abatements			852 15
" " " " " refunds			106 93
" " Supplies, abatements			717 54
			$15,823 38
EXPENDED.			
For Salaries of			
Engineer, E. C. Brooks	$1,500 00		
Asst. Eng., Wm. Blaisdell	1,048 57		
Labor as per pay-rolls	4,180 22		
		6,728 79	
Amounts carried forward		$6,728 79	$15,823 38

Water Works (Maintenance, Pumping) — Concluded.

Amounts brought forward		$6,728 79	$15,823 38
Copper waste, W. A. Morrison		21 78	
Electrical work, F. Bryant & Co. . . .		14 31	
Expressage, Dodge's Express		6 56	
Fuel:—			
L. G. Burnham & Co. .	$4,519 00		
Coleman Bros.	3,311 53		
		7,830 53	
Fittings, Walworth Mfg. Co.		8 77	
Hardware, tools and repairs, supplies:—			
Burditt & Bynner . . .	$11 69		
James Maitland	16 74		
		28 43	
Ice, Fresh Pond Ice Co.		26 25	
Lamps, electrical supplies, Pettingill, Andrews Co.		12 32	
Moving track at Fresh Pond, Fitchburg R. R. Co.		20 50	
Oil:—			
A. N. Reynolds & Co. .	$138 84		
Standard Oil Co. . . .	20 18		
		159 02	
Plumbing, Levi Hawkes		5 25	
Packing, waste, hose:—			
Boston Woven Hose Co. .	$24 26		
A. W. Chesterton & Co. .	9 33		
Hinckley Bros. & Co. . .	28 00		
		61 59	
Repairing boiler, Geo. W. Henderson . .		15 00	
Sundries		20 65	
Supplies, J. A. Holmes & Co.		6 63	
Telephone rent and tolls		57 00	
Thermometers, Queen & Co.		7 20	
Total			$15,030 58
Balance unexpended			$792 80

Water Works (Maintenance).

Renewal of Main Pipe.

Appropriation			$33,000 00
EXPENDED.			
For Labor, as per pay-roll		$16,540 74	
Carpentry, S. J. Kelley		11 76	
Car tickets, W. E. Street Railway Co.		100 00	
Castings, pipe, fittings:—			
Barbour, Stockwell Co.	$27 15		
Davis & Farnum Mfg. Co.	108 45		
McNeal Pipe & Foundry Co.	9,545 22		
Walworth Mfg. Co.	41 32		
George Woodman Co.	1,257 16		
		10,979 30	
Freight:—			
Owners of Schooner, Ida B. Gibson	$613 09		
Owners of Schooner, J. Howell Leeds	368 26		
		981 35	
Hose, Boston Woven Hose Co.		34 30	
Hydrants, Norword Engineering Co.		711 75	
Laying pipe under track, Fitchburg R.R.Co.		5 75	
Lead, Chadwick Lead Works		1,105 00	
Lumber, cement, Geo. W. Gale Lumber Co.		153 79	
Oil, Standard Oil Co.		7 25	
Packing, J. Baker & Co.		76 80	
Sundries		25 79	
Teaming, as per pay-rolls		829 07	
Tools and repairs, lanterns:—			
Ames Plow Co.	$42 98		
Chandler & Farquhar	6 72		
Dodge, Haley & Co.	7 80		
James Maitland	180 86		
Perrin, Seamans & Co.	6 80		
		245 16	
Valves, Ludlow Valve Mfg. Co.		771 65	
Total			32,579 46
Balance unexpended			$420 54

Water Works (Maintenance, Stony Brook Reservoir).

Appropriation			$1,100 00
EXPENDED.			
For Salary of gateman, Silas Baxter	$734 00		
Labor, as per pay-roll	6 00		
		$740 00	
Fuel, G. F. Frost		37 81	
Hardware and supplies, Burditt & Bynner		12 14	
Lumber, Buttrick Lumber Co.		20 01	
Manure, W. E. Kingsbury		14 50	
Posts, James B. Wood		23 80	
Sundries		6 09	
Teaming, W. E. Kingsbury		15 00	
Telephone rent and tolls		127 15	
Water Rates, City of Waltham		14 00	
Windows, E. M. Richardson		15 24	
Wire, Washburn & Moen Mfg. Co.		23 24	
Total			1,048 98
Balance unexpended			$51 02

Water Works (Interest on Water Loan).

Appropriation			$114,334 00
Transferred to Water Works, Sinking Fund			4,467 27
			$109,866 73
RECEIVED.			
For accrued interest on bonds		$892 00	
EXPENDED.			
For Interest on Water Debt			105,134 00
Balance unexpended			$4,732 73

Water Works (Rates, Fines, etc.).

RECEIVED.			
From Sundry persons for rates, fines, etc.			$301,150 92
EXPENDED.			
For Construction		$16,972 74	
Interest on Water Debt		104,242 00	
Maintenance		76,854 96	
Abatement of Rates		5,852 15	
Refund of Rates		2,806 93	
Sinking Fund requirements		94,422 14	
Total			$301,150 92

Water Works (Rates, Fines, etc.).

Abatements.

Appropriation	$5,000 00
Transferred from Water Works, Pumping	852 15
	$5,852 15

EXPENDED.

For abatements allowed on Water Rates	$5,852 15

Refunds.

Appropriation	$2,700 00
Transferred from Water Works, Pumping	106 93
	$2,806 93

EXPENDED.

For Refund of Water Rates	$2,806 93

Water Works (Sinking Funds).

Appropriation	$91,091 00
Tarnsferred from Interest of Water Loan	4,467 27
	$95,558 27

EXPENDED.

Paid to Trustee of Sinking Fund of Water Works	$95,558 27

Water Works (Supplies).

Appropriation		$6,800 00

RECEIVED.

For Supply-pipes, etc.	$8,430 00	

EXPENDED.

For Labor as per pay-rolls	3,108 50	
Drilling, Barbour, Stockwell Co.	7 20	
Frames and covers, Barbour, Stockwell Co.	40 00	
Hose, Boston Woven Hose Co.	5 83	
Hydrants, Barbour, Stockwell Co.	33 00	
Amounts carried forward	$3,194 53	$6,800 00

Water Works (Supplies) — Concluded.

Amounts brought forward		$3,194 53	$6,800 00
For Pipe and service box, fittings:—			
Walworth Mfg. Co. . . .	$358 41		
Geo. Woodman Co. . . .	1,871 81		
		2,230 22	
Sundries		1 18	
Valves, gates:—			
Chapman Valve Mfg. Co. .	$913 00		
Ludlow Valve Mfg. Co. .	37 40		
		950 40	
Total			6,376 33
Balance unexpended			$423 67

Water Works (Supplies).

Abatements.

Appropriation	$200 00
Transferred from Water Works, Maintenance, Pumping .	717 54
	$917 54

EXPENDED.

For Abatement of supply bills	$917 54

Cambridge Water Works

In account with the City of Cambridge for the year ending November 30th, 1897.

RECEIPTS AND EXPENDITURES.

Balance in the City Treasury to the credit of the Water Works, Nov. 30th, 1896.....	$121,595 66	Expended for —	
Received from sale of bonds...	375,000 00	General Construction.....	$11,284 37
Premiums, accrued interest, etc.	16,539 07	Fresh Pond Reservoir.....	16,972 74
Rates, fines, etc.....	301,150 92	Hobbs Brook Reservoir.....	398,187 52
Supplies.....	8,430 00	Payson Park Reservoir.....	70,760 24
		Interest on Water Debt.....	105,134 00
		Sinking Fund..	95,558 27
		Maintenance.....	80,329 89
		Abatements and Refunds....	8,659 08
		Supplies.....	7,293 87
		Balance carried forward to credit of Water Works.....	28,535 67
	$822,715 65		$822,715 65

Recapitulation.

City Department Accounts.	Receipts.	Appropriations.	Expended.	Balances Unexpend'd.
Assessors' Department	.....	$13,077 44	$13,077 44	.....
Auditing Department	.....	3,600 00	3,511 12	$88 88
Bridge Department	$796 74	14,000 00	13,997 49	2 51
Cemetery Department	19,644 05	20,500 00	19,846 77	653 23
City Clerk Department	2,552 25	7,200 00	7,193 53	6 47
Printing Town Records	.....	225 00	.....	225 00
City Messenger Department	.....	3,000 00	2,799 51	200 49
Civil Service Department	.....	250 00	248 07	1 93
Clerk of Committees Department	.....	4,000 00	3,946 56	53 44
Contingent Fund	966 41	7,695 24	7,474 10	221 14
Memorial Tablets	.....	500 00	492 36	7 64
Revision of Ordinances	.....	1,000 00	.....	1,000 00
Russell Memorial Volume	.....	500 00	.....	500 00
Election Expenses: —				
City Clerk	.....	4,950 00	4,909 61	40 39
Registrars of Voters	.....	3,683 92	3,683 92	.....
Superintendent of Public Buildings	.....	1,350 00	1,349 55	45
Engineering Department	2,000 00	11,500 00	10,974 97	525 03
Assessors' Plans	.....	2,000 00	1,994 32	5 68
Executive Department	.....	5,300 00	5,299 35	65
Fire Department	214 73	80,500 00	78,687 13	1,812 87
Health Department	.....	17,500 00	17,059 35	440 65
Inspection of Milk and Vinegar	150 50	1,600 00	1,583 90	16 10
Inspection of Provisions, etc.	.....	800 00	796 19	3 81
Inspection of Wires	200 41	10,700 00	10,699 98	02
Interest	8,737 53	137,000 00	134,396 40	2,603 60
Lamp Department	.....	70,000 00	69,264 96	735 04
Land Damages	.....	*66,282 28	52,579 67	13,702 61
Law Department	2,100 00	5,200 00	5,189 88	10 12
Overseers of the Poor Departm't:				
Almshouse	1,435 58	20,850 00	20,816 43	33 57
Farm and Ledge	15,683 63	12,050 00	12,048 33	1 67
House Offal	7,228 79	26,000 00	25,981 91	18 09
Outside Aid	5,144 79	48,600 00	46,027 13	2,572 87
Salary of City Physician	.....	1,500 00	1,500 00	.....
Park Department: —				
Construction and Lands	3,406 46	*207,246 19	159,484 20	47,761 99
Maintenance	75 17	12,000 00	11,999 70	30
Interest	223 60	28,000 00	27,800 00	200 00
Sinking Fund	.....	12,500 00	12,500 00	.....
Plumbers' Examiners Department	72 00	120 00	116 40	3 60
Police Department	7,043 90	113,550 42	113,550 42	.....
Public Library: —				
Current Expenses	4,272 94	19,000 00	18,997 32	2 68
East Cambridge Branch	.....	1,050 00	826 04	223 96
Public Property: —				
City Buildings, Care and Repairs	3,872 62	27,500 00	27,451 32	48 68
Incidentals	.....	5,500 00	5,439 98	60 02
Land for School House, Ward Three	.....	*3,500 00	3,500 00	.....
Land for School House, Ward Five	.....	*6,200 00	6,200 00	.....
New Latin School House	.....	*248,625 00	100,018 62	148,606 38
New School House, Ward One	.....	*15,792 08	15,792 08	.....
Furniture	.....	2,943 03	2,934 39	8 64
School Houses, Care and Repairs	.....	60,483 25	60,483 25	.....
Shooting Range	.....	400 00	396 92	3 08
School Department: —				
Care of Truants	.....	2,663 14	2,663 14	.....
Flags	.....	575 00	572 98	2 02
Incidentals	.....	1,250 00	1,247 55	2 45
Salaries	2,463 02	259,836 86	259,818 42	18 44
Text-Books and Supplies	311 86	17,650 00	17,648 36	1 64
Transportation of Pupils	.....	450 00	450 00	.....
Sealer of Weights and Measures	551 08	1,619 73	1,619 73	.....
Amounts carried forward	$89,148 06	$1,651,368 58	$1,428,940 75	$222,427 83

* Appropriation provided for by a Loan.

Recapitulation — Continued.

City Department Accounts.	Receipts.	Appropriations.	Expended.	Balances Unexpend'd.
Amounts brought forward	$89,148 06	$1,651,368 58	$1,428,940 75	$222,427 83
Sewer Department: —				
Clay Lands	.....	*8,131 32	7,856 32	275 00
Construction, General	14,012 19	32,300 00	31,937 71	362 29
Maintenance	2,166 14	24,200 00	23,283 06	916 94
Tannery Brook	2,684 60	1,500 00	1,154 36	345 64
Sinking Funds: —				
General	.....	96,725 00	96,725 00	.....
Harvard Bridge	.....	8,000 00	8,000 00	.....
State Aid	14,160 50	23,500 00	23,491 36	8 64
Stationery and Printing	1,201 82	3,000 00	2,847 32	152 68
Street Department: —				
Bridges	.....	8,000 00	7,999 40	60
Cleaning Streets	.....	24,000 00	23,999 62	38
Collection of Ashes	.....	20,000 00	19,763 37	236 63
Construction: —				
Boylston Street	.....	*458 69	458 68	01
Eighth Street	.....	*711 45	711 45	.....
Eliot Street	.....	*1,074 05	1,073 50	55
Gravel Bank	6,000 00	7,000 00	7,000 00	.....
Magee Street	.....	*2,352 00	1,633 86	718 14
New City Stable, Ward Five	.....	*50,044 86	30,039 43	5 43
New Streets, Clay Land District	.....	*55,000 00	54,030 41	969 59
Maintenance	11,043 92	73,562 00	73,529 39	32 61
Paving, Edgestones and Sidewalks	19,934 45	*57,909 84	57,817 46	92 38
Sidewalk around Public Library	.....	2,500 00	2,499 17	83
Rebuilding Massachusetts Ave.	.....	40,000 00	39,999 95	05
Watering Streets	16,240 74	26,000 00	25,853 33	146 67
Treasury Department	2,407 85	14,500 00	14,415 54	84 46
	$179,000 27	$2,211,837 79	$1,985,060 44	$226,777 35

Water Department Accounts.	Receipts.	Appropriations.	Expended.	Balances Unexpend'd.
Water Works Department: —				
Construction (General Account)	$339 43	*$12,500 00	$11,284 37	$1,215 63
Construction (Fresh Pond Land)	.....	*5,600 00	.....	5,600 00
Construction (Fresh Pond Reservoir)	.....	17,500 00	16,972 74	527 26
Construction (Hobbs Brook Reservoir)	8,363 55	*400,000 00	398,187 52	1,812 48
Construction (Payson Park Reservoir)	3,469 16	*75,000 00	70,760 24	4,239 76
Maintenance (General Account)	3,474 93	27,000 00	26,036 34	963 66
Maintenance (Office Expenses)	.....	5,700 00	5,634 53	65 47
Maintenance (Pumping)	.....	15,823 38	15,030 58	792 80
Maintenance (Renewal of Main Pipe)	.....	33,000 00	32,579 46	420 54
Maintenance (Stony Brook Reservoir)	.....	1,100 00	1,048 98	51 02
Interest on Water Loan	892 00	109,866 73	105,134 00	4,732 73
Rates, Fines, etc.	301,150 92	.....	.....	.....
Rates, Fines, etc. (Abatements)	.....	5,852 15	5,852 15	.....
Rates, Fines, etc. (Refunds)	.....	2,806 93	2,806 93	.....
Sinking Funds	.....	95,558 27	95,558 27	.....
Supplies	8,430 00	6,800 00	6,376 33	423 67
Supplies (Abatements)	.....	917 54	917 54	.....
	$326,119 99	$815,025 00	$794,179 98	$20,845 02

* Appropriation provided for by a Loan.

City Treasury.

DR.

To Cash in Treasury, December 1, 1896	$319,395 07	
Receipts as shown in the foregoing Statement (City Department Accounts)	179,000 27	
Receipts as shown in the foregoing Statement (Water Department Accounts)	326,119 99	
Amount received from Collector of Taxes for 1897	1,318,179 24	
Amount received from Collector of Taxes for other years,	211,075 46	
Betterments	268 50	
Cemetery Fund	3,797 25	
Loan, Clay Lands	20,000 00	
Loan, Parks	150,000 00	
Loan, Paving	20,000 00	
Loan, School House	109,500 00	
Loan, Street	11,000 00	
Loan, Temporary	600,000 00	
Loan, Water (Registered)	375,000 00	
Park Betterments	10,889 41	
Premium Account	13,351 75	
Tax, Corporation	80,158 88	
Tax, National Bank	16,086 87	
Trustees of Sinking Fund of Water Works	16,000 00	
		$3,779,822 69

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By Amount expended as shown in the foregoing Statement (City Department Accounts)	$1,985,060 44	
Amount expended as shown in the foregoing Statement (Water Department Accounts)	794,179 98	
Abatements (Taxes)	22,081 73	
Cemetery Fund	3,797 25	
Loan, Temporary	600,000 00	
Loan, Water	16,000 00	
Tax, County	73,887 84	
Tax Lien Account	3,104 48	
Tax, Metropolitan Sewer	137,297 30	
Tax, National Bank	7,995 91	
Tax, State	54,600 00	
		$3,698,004 93
Balance in Treasury		$81,817 76

Schedule of Real Estate Owned by the City of Cambridge, as shown on the Assessors' Books, Nov. 30, 1897.

Cambridge Cemetery:—			
$60\frac{1}{10}$ acres of land		$60,000	
1 house		2,500	
			$62,500
Cambridge Public Library:—			
135,621 feet of land		67,000	
Library Building		116,000	
			183,000
Fire Department:—			
Hook and Ladder No. 2, Portland Street	$12,000		
11,931 feet of land	3,000		
		15,000	
Engine House No. 5, junction Cambridge and Hampshire Streets	10,000		
6,000 feet of land	5,000		
		15,000	
Police Station, Fourth Street	20,000		
4,220 feet of land	2,100		
		22,100	
Engine House, S. S. Main, cor. Deacon Street	12,000		
9,400 feet of land	7,300		
		19,300	
Engine House, Mass. Ave.	23,000		
9,532 feet of land	6,000		
		29,000	
Engine House No. 4 and stable, North Avenue	7,000		
6,516 feet of land	3,000		
		10,000	
Engine House No. 6, River Street	12,000		
4,994 feet of land	2,500		
		14,500	
Engine House, E. S. Lexington Ave.	16,000		
15,262 feet of land	4,000		
		20,000	
Amounts carried forward		$144,900	$245,500

Amounts brought forward		$144,900	$245,500
Fire Department:—			
Engine House, Mass. Avenue .	26,000		
10,000 feet of land	8,000		
		34,000	
Engine House, Third Street . .	17,500		
10,100 feet of land	5,500		
		23,000	
			201,900
Overseers of the Poor Department:—			
$14\frac{242}{1000}$ acres of land		$15,000	
Almshouse buildings		25,000	
			40,000
Public buildings and lands:—			
City Hall Mass. Avenue . . .	$200,000		
47,878 feet of land	72,000		
		272,000	
Ward One Building, Mt. Auburn Street	60,000		
16,153 feet of land	16,000		
		76,000	
Ward Four Building, Green Street	50,000		
13,028 feet of land	10,500		
		60,500	
Stables, sheds and scales, Hampshire Street	17,000		
72,661 feet of land	30,000		
		47,000	
City Stables, W. S. Raymond Street	27,000		
272,670 feet of land	11,000		
		38,000	
Park, Boylston, Mt. Auburn and Winthrop Streets, 10,236 feet of land		10,000	
Park, S. S. Broadway, 107,181 ft. land		54,000	
Park, Hastings Square, 30,000 ft. land		9,000	
Park, Dana Square, 33,531 ft. land		12,000	
Park, Pleasant Street, 1,372 ft. land		1,000	
Amounts carried forward		$579,500	$487,400

Amounts brought forward		$579,500	$487,400
Public buildings and lands:—			
Park, Pleasant, River, Cottage and Kinnaird Streets, 1,569 ft. land		1,200	
Fort Washington, E. S. Waverly Street, 42,123 ft. land . . .		8,000	
Mill Pond Property, N.S. River St., W. S. Blackstone St., 70,684 ft.		29,000	
Lot, E.S. Portland Street, 18,011 ft.		5,500	
8 lots, E. S. Norfolk Street, 39,600 feet		12,000	
42 lots, Western Ave., Putnam Ave., Bancroft, Gilmore, and Montague Streets, 123,803 feet .		28,100	
Lot, Second Street, 26,400 ft. .		5,200	
Lot, W. S. Reed Street, 1,500 feet		100	
2 lots, Walden Street, 16,365 feet		1,600	
Flats, S. S. Main Street, 162,000 ft.		7,600	
Common, Garden, Mass. Avenue, and Waterhouse Sts., 370,785 ft.		150,000	
Park, Mass. Ave., Kirkland and Cambridge Sts., 33,357 feet Park, Mass. Avenue and Harvard Sq., 23,074 feet . . . Park, Mass. Avenue and Holmes Place, 20,956 feet		77,000	
Park, Rindge Ave., and Groveland Streets, 501,729 feet . .		30,047	
Lot, W. S. Blackstone St. Western Ave., and Ampere St., 19,934 ft.		5,600	
Mt. Auburn St.:—			
60,508 feet of land		9,000	
Ward 3, Charles River Parkway, 452,910 feet		40,000	
Ward 4, Charles River Parkway, 2,180,889 feet		86,500	
Ward 2, Cambridge Field, Shelter House, ...	28,000		
556,110 feet	22,000		
		50,000	
Amounts carried forward		$1,125,947	$487,400

Amounts brought forward		$1,125,947	$487,400
Public buildings and lands:—			
Triangular lot, Mass. Avenue and Arrow Street, 872 feet . . .		800	
Burial ground, Mass. Avenue and Garden Street, 85,858 feet . .			
Triangular lot, Chauncy and Garden Streets, 3,189 feet . . .		2,000	
Buildings and lands, N. S. Bridge		1,000	
			$1,129,747

SCHOOLHOUSES AND LANDS.

Ward One.

New High School, Broadway . .	$220,000		
154,125 feet of land	84,700		
		$304,700	
Washington Grammar, Brattle Street	30,000		
14,951 feet of land	10,000		
		40,000	
Corlett Grammar, Holworthy Street	3,000		
10,000 feet of land	1,000		
		4,000	
Manual Training School, Broadway, Irving and Felton Streets . . .		36,200	
Land, 73,128 feet			
Agassiz Primary, Sacramento Street	18,000		
19,689 feet of land	7,000		
		25,000	
Cushing Primary, Cushing Street .	3,000		
14,787 feet of land	1,500		
		4,500	
Dunster Primary, Concord Avenue	4,000		
10,000 feet of land	3,000		
		7,000	
Holmes Primary, Hilliard Street .	6,000		
11,182 feet of land	5,600		
		11,600	
Lowell Primary, Lowell Street . .	7,000		
12,033 feet of land	3,600		
		10,600	
Amounts carried forward		$443,600	$1,617,147

Amounts brought forward. . . .		$443,600	$1,617,147
Quincy Primary, Mason Street . .	10,000		
8,469 feet of land	5,800		
		15,800	
Riverside Primary, Putnam Avenue	5,000		
11,198 feet of land	3,000		
		8,000	
Russell School, Larch Street . . .	40,000		
33,073 feet of land	5,000		
		45,000	
Ward Two.			
Latin High, Fayette Street . . .	$40,000		
37,828 feet of land	15,000		
		55,000	
Old Latin School, Lee Street . .	10,000		
10,100 feet of land	5,000		
		15,000	
Wellington Training, Columbia St.	16,000		
18,870 feet of land	5,700		
		21,700	
Allston Grammar, Boardman Street	18,000		
15,193 feet of land	4,600		
		22,600	
Harvard Grammar, Inman Street .	40,000		
20,494 feet of land	12,000		
		52,000	
Bridge Primary, Pioneer Street . .	500		
4,646 feet of land	1,400		
		1,900	
Dana Primary, Centre Street . .	2,000		
14,317 feet of land	4,300		
		6,300	
Felton Primary, Amory Street . .	6,000		
15,090 feet of land	4,500		
		10,500	
Gannett (old) Primary, Columbia St.	2,000		
8,803 feet of land	2,500		
		4,500	
Gannett (new) Primary, Jefferson St.	12,000		
15,434 feet of land	3,000		
		15,000	
Sargent Primary, Broadway . . .	3,000		
9,995 feet of land	4,000		
		7,000	
Amounts carried forward		$723,900	$1,617,147

Amounts brought forward		$723,900	$1,617,147
Stearns Primary, Harvard Street .	3,000		
10,050 feet of land	5,000		
		8,000	
Parker Primary, S. S. Broadway .	15,000		
12,329 feet of land	7,000		
		22,000	
Ward Three.			
Putnam Grammar, Fourth and Otis Streets	$60,000		
14,400 feet of land	9,800		
		69,800	
Thorndike Grammar, Thorndike St.	30,000		
10,027 feet of land	4,000		
		34,000	
Gore Primary, Gore Street . . .	25,000		
9,900 feet of land	4,000		
		29,000	
Lassell Primary, Charles Street . .	8,000		
10,000 feet of land	2,500		
		10,500	
Otis Primary, Otis Street . . .	$12,000		
8,270 feet of land	4,000		
		16,000	
Taylor School House	36,000		
20,000 feet of land	6,000		
		42,000	
Ward Four.			
Webster Grammar, Upton Street .	$50,000		
25,839 feet of land	9,000		
		59,000	
Boardman Primary, Windsor Street	12,500		
10,018 feet of land	4,000		
		16,500	
Tarbell Primary, Grigg Street . .	8,000		
19,500 feet of land	4,000		
		12,000	
Willard Primary, Lake Street . .	20,000		
20,079 feet of land	5,000		
		25,000	
Morse School House, Allston and Brookline Streets	73,000		
25,650 feet of land	7,000		
		80,000	
Amounts carried forward		$1,147,700	$1,617,147

Amounts brought forward		$1,147,700	$1,617,147
Ward Five.			
Peabody Grammar, Linnæan Street	$27,000		
21,813 feet of land	8,700		
		35,700	
Shepard Grammar, Mass. Avenue	20,000		
14,755 feet of land	7,000		
		27,000	
Reed Primary, Reed Street . . .	4,000		
12,000 feet of land	1,200		
		5,200	
Wyman Primary, Rindge Avenue	6,000		
14,347 feet of land	4,000		
		10,000	
Sleeper School, Dudley Street . .	29,000		
21,284 feet of land	4,000		
		33,000	
E. S. Norris Street Schoolhouse Lot, 25,700 feet of land . . .		5,000	
			1,263,600
Sewer Department:—			
23,707 feet of land, Pilgrim Street		5,900	
Stables, shed, house, and building		4,100	
			10,000
Water Works:—			
House, shop, and stables, S. S. Concord Avenue	4,000		
$27\frac{33}{100}$ acres of land	16,700		
		20,700	
Land, S. S. Concord Avenue, 5-8 acre		300	
Land, E. S. Woodlawn Avenue, 15,735 feet		800	
Lot, rear of Grove Street, 272,800 feet		2,000	
Lot, S. S. Concord Avenue, 99,000 feet		1,000	
Land, S. S. Concord Avenue, 11,220 feet		100	
Two lots, S. S. Concord Avenue, 219,400 feet		2,200	
Gate-house lot, Concord Avenue, 43,560 feet		400	
Amounts carried forward		$27,500	$2,890,747

Amounts brought forward	$27,500	$2,890,747
Water Works:—		
Lot, S. S. Concord Avenue, 24,100 feet	300	
Fresh Pond Lane, 11 1-4 acres of land	11,000	
Kingsley Park, Fresh Pond Lane, 309,336 feet	8,000	
Lot, rear Fresh Pond Lane, 364,608 feet	3,500	
Lot, Woodlawn Avenue, 107,616 feet	8,000	
Lot, Woodlawn Avenue, 26,989, ft.	1,600	
Lot, rear Fresh Pond Lane, 239,541 feet	5,000	
Lot, Woodlawn Avenue, 91,040 ft.	2,000	
Lot, Holworthy Street, 18,480 ft.		
Lot, S. S. Huron Ave., 22,348 ft.	700	
Lot, E. S. Cushing Street, 41,053 feet	800	
Lot, Cushing Street, cor. Woodland Avenue, 95,482 feet . .	2,000	
Lot, Woodland Avenue, 24,096 feet	1,900	
Lot, E. S. Cushing St., 222,750 ft. Lot, E. S. Cushing St., 416,800 ft.	4,000	
Two lots, near Fresh Pond and Adams Place, 110,891 feet .	1,000	
Land, Adams Place, 55,275 feet . 105,322 feet	1,400	
Lot, Woodlawn Avenue, 25,216 feet of land	1,200	
Land, Woodlawn Avenue, 133,336 feet	13,700	
Gravel pit, S. S. Concord Avenue, 397,417 feet	3,000	
190,500 feet of land, Adams Street	4,300	
Lot, S.S. Huron Avenue, 91,112 ft.	500	
Near Concord Avenue, 4½ acres	5,000	
Adams Place, 419,222 feet of land	10,000	
Amounts carried forward	$116,400	$2,890,747

Amounts brought forward		$116,400	$2,890,747
Water Works:—			
S. S. Concord Avenue, 10,805 feet of land		500	
S. S. Concord Avenue, 32,425 feet of land		700	
S. S. Concord Avenue, 62,000 feet of land		1,200	
Lot, Adams Street, 1¾ acres . .		1,000	
Concord Avenue, 294,000 feet of land		3,000	
Tudor Park, near Concord Avenue, 57, 312 feet of land . .			
Pumping Station, Worthington Street	$50,000		
Dwelling house	2,000		
90,414 feet of land	9,000		
		61,000	
One house and stable Lexington Avenue, Lake View Avenue, and Vassal Lane, 88,077 feet of land		17,000	
Reservoir, Reservoir Street, 91,003 feet of land		27,000	
Two houses, stable and sheds and building, S. S. Auburn Street .	5,700		
33,300 feet of land	6,600		
		12,300	
Lot, Grove Street, 150,000 feet .		1,500	
Land and buildings, Grove Street, 519,000 feet		11,000	
Lot, Fresh Pond Lane, cor. Huron Avenue, 46,479 feet		6,900	
Lot, Fresh Pond Lane, 206,900 feet		20,000	
			279,500
Total			$3,170,247

Exempted Property.

The following is a schedule of property used for religious, charitable, and educational purposes, and exempt from taxation by law, not including that owned by the City of Cambridge, as shown on the Assessors' Books, November 30, 1897.

Ward One.

Christ Church, Episcopal, Garden Street:—		
Church	$12,000 00	
22,701 feet of land	17,000 00	
		$29,000 00
First Parish Church, Unitarian:—		
Church, Massachusetts Ave.	20,000 00	
14,764 feet of land	22,000 00	
		42,000 00
Cambridge Social Union:—		
House, No. 42, Brattle Street	5,000 00	
$\frac{1}{2}\frac{3}{2}$ of hall	7,000 00	
9,030 feet of land	6,700 00	
		18,700 00
Epworth M. E. Church:—		
Church, Massachusetts Ave.	80,000 00	
11,248 feet of land	10,000 00	
		90,000 00
Old Cambridge Baptist Society:—		
Church, Mass. Ave. and Harvard Street	86,000 00	
34,573 feet of land	24,000 00	
		110,000 00
Shepard Congregational Society:—		
Church, Garden Street . .	110,000 00	
34,556 feet of land	34,000 00	
		144,000 00
St. Peter's Roman Catholic:—		
Church, Concord Avenue .	45,000 00	
32,000 feet of land	10,000 00	
		55,000 00
Amount carried forward		$488,700 00

Amounts brought forward		$488,700 00
St. Paul's Roman Catholic:—		
Church, Mt. Auburn St. . .	30,000 00	
11,216 feet of land	11,000 00	
		41,000 00
St. Paul's Catholic School Association:—		
Personal property	1,500 00	
School building	55,000 00	
House, Arrow and Mt. Auburn Streets	8,000 00	
29,091 feet of land	17,000 00	
		81,500 00
Cambridge Hospital:—		
Personal Property	37,048 19	
Building, Mt. Auburn St. .	78,000 00	
419,885 feet of land . . .	100,000 00	
		215,048 19
Longfellow Memorial Association:—		
Personal property	16,891 11	
Park, S. S. Brattle Street, 93,618 feet	56,000 00	
		72,891 11
Episcopal Theological School, Trustees of:—		
Personal property	123,051 33	
Chapel, seminary, dormitories, Brattle and Mason Streets, and Hastings Ave.	189,371 82	
		312,423 15
Avon Home, Mt. Auburn Street:—		
Building	22,000 00	
69,751 feet of land	20,000 00	
Personal property	41,900 00	
		83,900 00
Holy Ghost Hospital for Incurables:—		
Building, Cambridge St. . .	35,500 00	
218,321 feet of land . . .	54,500 00	
		90,000 00
Amount carried forward		$1,385,462 45

Amounts brought forward		$1,385,462 45	
Radcliffe College:—			
Personal property	$340,733 83		
Two houses, laboratory, schoolhouse and gymnasium, Garden, Brattle and Mason Streets	57,000 00		
62,685 feet of land . . .	62,000 00		
		$459,733 83	
The Corporation of the New Church Theological School:—			
Personal property	70,106 00		
Two houses and stable, 42–48 Quincy Street	16,000 00		
82,880 feet of land. . . .	60,000 00		
		146,106 00	
President and Fellows of Harvard College:—			
Personal property . . .	6,073,862 33		
Dormitories, chapels, laboratories, museums, lecture rooms and houses, including Ward Five property .	3,070,550 00		
		9,144,412 33	
Commonwealth of Mass.:—			
Metropolitan Park, 29 acres and 49,500 feet		6,200 00	
			$11,141,914 61

Ward Two.

Baptist Church, Trustees of funds of:—			
Chapel, Hampshire St. . .	$3,000 00		
2,560 feet of land	800 00		
		$3,800 00	
Broadway Baptist Church:—			
Church, W. S. Boardman Street	30,000 00		
13,620 feet of land	8,000 00		
		38,000 00	
Amounts carried forward . .		$41,800 00	$11,141,914 61

Amounts brought forward		$41,800 00	$11,141,914 61
Cambridgeport Unitarian Society:—			
Church, N. S. Austin Street	$18,000 00		
13,116 feet of land	8,000 00		
		26,000 00	
Harvard Street M. E. Society:—			
Church, N. S. Harvard Street	22,000 00		
10,030 feet of land	8,000 00		
		30,000 00	
St. Paul's A. M. E Church:—			
Church, N. S. Hastings Street	2,000 00		
5,386 feet of land	2,000 00		
		4,000 00	
Hope Congregational Church:—			
Church, N. S. Harvard Street	8,000 00		
6,000 feet of land	3,000 00		
		11,000 00	
First Evangelical Congregational Society:—			
Church, W. S. Prospect Street	40,000 00		
19,153 feet of land	12,000 00		
		52,000 00	
First Free Baptist Church:—			
Church, N. S. Hampshire St.	3,000 00		
3,851 feet of land	1,500 00		
Church, N. S. Harvard St. .	9,000 00		
6,250 feet of land	4,700 00		
		18,200 00	
First Universalist Society of Cambridge:—			
Church, E. S. Inman Street .	20,000 00		
15,312 feet of land	11,300 00		
		31,300 00	
St. Mary's Parochial School:—			
Church, W. S. Norfolk, corner Harvard Street . . .	45,000 00		
Girls' School, S. S. Harvard Street	60,000 00		
Boys' School, E. S. Essex Street	18,000 00		
Amounts carried forward .	$123,000 00	$214,300 00	$11,141,914 61

Amounts brought forward.	$123,000 00	$214,300 00	$11,141,914 61
St. Mary's Parochial School:—			
Sisters' Home, 50 and 52 Essex Street	7,000 00		
57,428 feet of land	20,000 00		
Theatre, E. S. Norfolk Street	15,000 00		
13,032 feet of land	6,500 00		
Gymnasium, E. S. Prospect Street	35,000 00		
11,370 feet of land	5,600 00		
House, 121 Norfolk Street	7,500 00		
7,500 feet of land	2,300 00		
		221,900 00	
Cambridge Home for Aged People, 183 Hancock St.:—			
Personal property	36,163 50		
12,094 feet of land	6,000 00		
One house	7,000 00		
		49,163 50	
First Reformed Presbyterian Church, W. S. Antrim Street	7,000 00		
5000 feet of land	2,000 00		
		9,000 00	
St. Bartholomew's Church, W. S. Columbia Street	6,000 00		
5,562 feet of land	1,500 00		
		7,500 00	
First United Presbyterian Church:—			
Church, S. S. Cambridge St.	6,000 00		
9,173 feet of land	4,600 00		
		10,600 00	
Holy Ghost Hospital for Incurables, Cambridge Street:—			
70,858 feet of land		10,000 00	
			522,463 50
Ward Three.			
First Methodist Episcopal Church:—			
Church, Cambridge corner Third Street	25,000 00		
5,000 feet of land	12,500 00		
		37,500 00	
Amounts carried forward		$37,500 00	$11,664,378 11

Amounts brought forward		$37,500 00	$11,664,378 11
Mass. Baptist Convention, Tr.:—			
Church, Cambridge and Fourth Streets	$25,000 00		
6,000 feet of land	11,000 00		
		36,000 00	
Mission of the Ascension:—			
Church, Third and Thorndike Streets	5,000 00		
5,000 feet of land	4,000 00		
		9,000 00	
Second Universalist Society:—			
Church, Otis Street . . .	16,000 00		
5,000 feet of land	3,000 00		
		19,000 00	
Church of the Sacred Heart:—			
Church, Sixth, Otis, and Seventh Streets	70,000 00		
30,000 feet of land	12,000 00		
		82,000 00	
St. John's Church:—			
Church E. S. Fourth . . .	5,000 00		
7005 feet of land	4,200 00		
		9,200 00	
County of Middlesex:—			
Court House, Third, Otis, and Thorndike Streets . .	70,000 00		
Registry of Deeds, Second, Otis, and Third Streets .	175,000 00		
60,000 feet of land . . .	36,000 00		
		281,000 00	
Cambridge, Otis, Second and Third Streets, 60,000 feet of land		60,000 00	
House of Correction, Jail, and shops, Thorndike, Third, Spring, and Second Streets .	250,000 00		
60,000 feet of land	24,000 00		
		274,000 00	
Amounts carried forward		$807,700 00	$11,664,378 11

Amounts brought forward		$807,700 00	$11,664,378 11
St. John Literary Institute:—			
Hall and stores, Cambridge Street, ⅔ value	$20,000 00		
⅔ of 6,300 feet of land . .	4,700 00		
Cash assets	2,322 00		
		27,022 00	
			834,722 00
Ward Four.			
Cambridge Young Men's Christian Association:—			
Personal property	7,591 71		
Building, Massachusetts Ave.	8,000 00		
Land	8,000 00		
New building, Massachusetts Avenue	75,000 00		
24,145 feet of land	22,000 00		
		120,591 71	
Immanuel Baptist Church:—			
Church, E. S. Magazine Street	25,000 00		
11,250 feet of land	3,000 00		
		28,000 00	
First Baptist Society:—			
Church Central Square . .	80,000 00		
21,200 feet of land	20,000 00		
		100,000 00	
First Church of the Evangelical Association of North America:—			
Church, 44 William Street .	5,000 00		
6,750 feet of land	2,700 00		
		7,700,00	
First Swedish Baptist Church of Cambridge:—			
1 House, 77 Columbia Street	2,000 00		
2,765 feet of land	1,200 00		
		3,200 00	
Grace M. E. Church:—			
Church, E.S. Magazine Street	15,000 00		
7,700 feet of land	5,000 00		
		20,000 00	
Amounts carried forward		$279,491 71	$12,499,100 11

Amounts brought forward		$279,491 71	$12,499,100 11
Massachusetts Baptist Convention—Union Baptist Church:—			
Church, 874 Main Street, .	10,000 00		
3,900 feet of land	2,800 00		
		12,800 00	
Pilgrim Congregational Church:—			
Church, W. S. Magazine Street	30,000 00		
8,885 feet of land	7,500 00		
		37,500 00	
Baptist Home, 32 Chestnut, and 308 Brookline Street, one house and stable	21,500 00		
Personal property	6,331 27		
		27,831 27	
The Lamson Home, 322 Brookline Street, one house . .	5,000 00		
5,000 feet of land	2,000 00		
Personal property	7,746 14		
		14,746 14	
Mount Olive Baptist Church S. S. State St.:—			
5,000 feet of land		2,500 00	
Pilgrim Congregational Society:—			
W. S. Magazine Street . .			
1,800 feet of land		1,200 00	
Protestant Episcopal Church, Trustees of Donations to:—			
Church, S. S. Mass. Ave. (St. Peter's)	10,000 00		
9,229 feet of land	9,000 00		
		19,000 00	
East End Union Mission:—			
Church, W. S. Brewery Street, on Rogers' land .		3,500 00	
Rush African M.E. Zion Church:—			
Church, S. S. School Street .	6,000 00		
2,760 feet of land	1,100 00		
		7,100 00	
Amounts carried forward . .		$405,669 12	$12,499,100 11

Amounts brought forward		$405,669 12	$12,499,100 11
St. Philip's Church, Episcopal:—			
Church, N. S. Allston Street	3,000 00		
4,686 feet of land	1,200 00		
		4,200 00	
Wood Memorial Church, Congregationalist:—			
Church, W. S. Columbia, corner Austin Street . .	30,000 00		
7,500 feet of land	4,000 00		
		34,000 00	
Prospect Union Association:—			
Personal property	122 28		
Building, 744 Mass. Ave. .	6,700 00		
11,449 feet of land	7,200 00		
		14,022 28	
			457,891 40
Ward Five.			
Catholic Cemetery, Rindge Ave.			
304,014 feet of land . . .		$30,000 00	
North Avenue Congregational Society:—			
Church, Mass. Ave. . . .	$30,000 00		
13,430 feet of land	8,000 00		
		38,000 00	
Porter's Station Depot, Mass. Ave., Fitchburg Railroad Company		2,000 00	
Third Universalist Society:—			
Church, Mass. Ave. . . .	30,000 00		
11,958 feet of land . . .	7,000 00		
		37,000 00	
St. James' Episcopal Society:—			
Church and chapel, Mass. Ave. and Beech Street .	75,000 00		
21,207 feet of land (cemetery lot included)	12,700 00		
		87,700 00	
Amounts carried forward		$194,700 00	$12,956,991 51

Amounts brought forward		$194,700 00	$12,956,991 51
Abbott, Edward, Trustee for W. S. Beech:—			
Lot, 7,965 feet of land . .		3,200 00	
North Avenue Baptist Society:—			
Church, Mass. Ave. . . .	55,000 00		
38,525 feet of land	15,000 00		
		70,000 00	
Williams, John J., S. S. Rindge Avenue:—			
School house	40,000 00		
20,000 feet of land	4,000 00		
		44,000 00	
Marist Fathers of Boston, French Roman Catholic Church:—			
Church, N. S. Harvey Street	40,000 00		
14,648 feet of land	3,000 00		
		43,000 00	
Weymouth, Harrison G. O. (disabled soldier)			
Orchard Street			
4,800 feet of land		1,900 00	
			356,800 00
			$13,313,791 51

REPORT OF THE COMMITTEE ON ACCOUNTS

CAMBRIDGE, December 21, 1897.

To the Honorable the City Council: —

In compliance with the requirements of the City Ordinances, the Committee on Accounts respectfully submits the annual report for the year 1897.

Meetings of the Committee for the examination of the books and accounts of the City Auditor have been regularly held during the first week in each month. The Committee takes pleasure in expressing its approbation of the accuracy and neatness with which the numerous accounts have been kept, and further desires to make public commendation of the faithfulness with which the City Auditor has discharged the responsible and varied duties of his office.

CHARLES P. KEITH,
EBEN H. GOOGINS,
CHAS. H. MONTAGUE,
WILLIAM F. BROOKS,
HAMILTON H. PERKINS,
} *Committee on Accounts.*

REPORT OF THE COMMITTEE ON FINANCE

The annual report of this Committee for the financial year ending November 30, 1897, is herewith submitted.

In accordance with the requirements of the City Ordinances, the following estimates for the year were reported by the Committee, in February last.

Estimates of ways and means for the year 1897 : —

Appropriations and Revenue, 1897.

ESTIMATE OF REVENUE.

City Department accounts	$173,577 40	
Water Department accounts	305,000 00	
Other revenue and cash in Treasury . .	598,395 07	
Grand Total		$1,076,972 47

TOTAL AMOUNT OF APPROPRIATIONS RECOMMENDED.

City Department accounts	$2,050,525 79	
Water Department accounts	809,425 00	
Grand Total		$2,859,950 79

GENERAL RECAPITULATION.

Amount of expenses as before recited .	$2,859,950 79	
Allowance for City Treasurer's estimate of uncollected taxes for the year 1897, remaining uncollected as of November 30, 1897	200,000 00	
Total appropriations and liabilities	$3,059,950 79	
Less estimated revenue of all kinds and cash in Treasury	1,076,972 47	
Leaving amount to be provided for		$1,982,978 32

This amount was provided for as follows: —

1.	By issue of City Bonds, viz:—		
	School house: New Latin school house	$250,000 00	
	Street Loan: Eighth Street .	6,000 00	
			$256, 000 00
2.	By the issue of Clay Land bonds		20,000 00
3.	By the issue of Park Loan bonds		50,000 00
4.	By the issue of Water Loan bonds		383,000 00
5.	By assessment upon the polls and estates of the inhabitants of Cambridge, etc., for the current year, being amount required for municipal expenses for the year		$1,273,978 32
			$1,982, 978 32

In accordance with the foregoing the following orders were reported and after slight amendments were adopted by the City Council.

City of Cambridge.

In Common Council, February 23, 1897.

Ordered, That the sum of *One Million, Two Hundred Seventy-three Thousand, Nine Hundred and Seventy-eight Dollars and Thirty-two Cents* ($1,273,978.32) be raised by assessment upon the polls and estates of the inhabitants of the City of Cambridge, and the estates of non-resident proprietors, according to law, to defray the current expenses of the City, for the financial year beginning December 1, 1896, and ending November 30, 1897.

City of Cambridge.

In Common Council, February 23, 1897.

Ordered, That the sums following be and are hereby appropriated towards defraying the expenses of the City of Cambridge for the financial year beginning December 1, 1896, and ending November 30, 1897.

Total amount of appropriations $3,059,950 79

Changes were made by the City Council in some of the appropriations, thereby reducing the aggregate before stated to the sum

of $3,059,000 00 and the orders before mentioned were subjected to corresponding amendments. Full details of these may be found in the report of the City Auditor, to which reference is also made for particulars concerning the city loans authorized during the year, on this committee's recommendation.

The usual sub-committee which consisted of Alderman Keith, Councilmen Saunders and Coolidge, was appointed to examine the condition of the City Treasury at the close of business on Tuesday November 30.

This sub-committee submitted the following report:—

CITY OF CAMBRIDGE, December 21, 1897.

To the Committee on Finance :—

GENTLEMEN:— The sub-committee appointed to count and examine the cash in the hands of the City Treasurer at the close of business on November 30, 1897, would respectfully report :—

Nov. 30, 1897. Actual cash and business checks in City Treasurer's office, amounted to	$19,482 36	
Also a certificate from W. A. Bullard, Cashier of First National Bank of Cambridge, Mass., showing a balance (at close of business Nov. 30, 1897) to the credit of the City Treasurer, of .	176,279 74	
Also a certificate from Louis W. Cutting, Treasurer of the Cambridge Safe Deposit and Trust Co., of Cambridge, Mass., showing a balance (at close of business Nov. 30, 1897) to the credit of the City Treasurer of	48,022 04	
Making the total cash on hand		$243,784 14
December 21, 1897. After the above examination by your committee, certain additional entries belonging to the financial year of 1897, were made, the receipts and expenditures which these same represent being as follows:—		
Amount carried forward		$243,784 14

Amount brought forward		$243,784 14
RECEIPTS.		
Account of taxes 1896, additional to entry of Nov. 30, but not previously recorded	$4,239 11	
Account of taxes 1897, additional to entry of Nov. 30, but not previously recorded	17,087 25	
Account of Street Department, Watering: collections for taxes for 1896 and 1897, as above	251 90	
Account of Interest, collections for taxes 1896 and 1897, as above	244 63	
Account of Treasury Department, summonses collected on taxes 1896 and 1897, as above	62 20	
From Commonwealth of Massachusetts:—		
Account of State Aid	13,715 37	
Account of Corporation Tax	73,153 46	
Account of National Bank Tax, being amount received for stocks of Massachusetts Banks outside of Cambridge owned by Cambridge residents	15,961 51	
A total of		124,715 43
Which amount added to City Treasurer's balance of Nov. 30, 1897, as above, makes a total of		$368,499 57
EXPENDITURES.		
Authorized additional payments as of Nov. 30, 1897, verified by your committee are as follows:—		
Account of Water Works, Sinking Fund, being surplus in running accounts of the Water Works Department, paid to the Trustees of the Sinking Fund of the Cambridge Water Works	$4,467 27	
Amounts carried forward	$4,467 27	$,368,499 57

Amounts brought forward	$4,467 27	$368,499 57
Account of Abatement-Taxes, being Assessors' certificates received and paid on account of taxes 1896 and 1897 as before mentioned	1,705 81	
Paid Commonwealth of Massachusetts:—		
Account of Metropolitan Sewer Tax. Amount assessed upon Cambridge in 1897 for the year 1896 (no assessment having been made by State during that year) for Interest, Maintenance and Sinking Fund charges on account of Metropolitan Sewer	69,033 87	
Amount assessed upon Cambridge for 1897, being annual assessment for Interest, Maintenance and Sinking Fund charges on account of Metropolitan Sewer	68,263 43	
Account of National Bank Tax, being refund of taxes on non-resident owners of stock in Cambridge Banks . .	7,995 91	
Account of State tax, being assessment for year 1897	54,600 00	
		206,066 29
Which deducted from the foregoing total of receipts, etc., shows a balance of .		$162,433 28
From this balance should be deducted the following amounts held by the City Treasurer for account of contracts given by the Cambridge Water Board to the several named parties, the said amounts being guarantees for the performance of said contracts, but not being a legitimate part of the City Treasurer's accounts.		
Groshen High Duty Pumping Engine Company of New York City, N. Y. .	$5,000 00	
Amounts carried forward	$5,000 00	$162,433 28

Amount brought forward		$162,433 28
Charles E. McKinnon of Cambridge, Mass.	1,100 00	
Frank X. Saucier of Boston, Mass., .	500 00	
A total of		$6,600 00
Showing a balance in the City Treasurer's hands as of November 30, 1897, of .		$155,833 28

Your Committee would further state that we carefully examined the total cash receipts for the financial year of 1897, as of the City Treasurer's books, and find the same to be as follows:—

Total cash receipts from all sources for the year ending Nov. 30, 1897, as per Treasurer's Ledger.	$3,460,427 62	
To this should be added cash balance of Nov. 30, 1896	419,036 38	
A total of		$3,879,464 00
Total cash expenditures for the year ending Nov. 30, 1897, as per Treasurer's Ledger, the same authorized by sundry drafts of the Mayor which your committee examined		3,723,630 72
Which amount deducted from the above total shows a cash balance as of Nov. 30, 1897, verified by our above report of examination, of		$155,833 28

CHARLES P. KEITH,
GEORGE E. SAUNDERS,
DANIEL S. COOLIDGE,
} *Sub-Committee.*

The foregoing being intended to embrace only a brief statement in reference to such financial doings of the City Council, as were carried forward under the recommendations of this Committee, all

details of figures have been avoided as properly belonging to the report of the City Auditor. Many important matters have been under consideration before the Committee, several of which, relating to extensive public improvements, are still pending, and will therefore go over to the next year.

RUSSELL BRADFORD,
WATSON G. CUTTER,
CHARLES P. KEITH,
JOHN L. ODIORNE,
ALBERT S. APSEY,
CORNELIUS MINIHAN,
SEDLEY CHAPLIN,
GEORGE E. SAUNDERS,
CHARLES H. FOSGATE,

Committee on Finance.

REPORT OF THE CITY TREASURER

OFFICE OF CITY TREASURER, December 1, 1897.

To the Honorable the City Council: —

In the following pages I submit a detailed report of the receipts and expenditures of the public funds by the Treasury Department, during the year ending November 30, 1897, including an account of all bonded and temporary loans negotiated in said year, also a detailed account of official fees received and a report on the Cemetery Fund.

Very respectfully,

WM. W. DALLINGER,

City Treasurer.

CITY OF CAMBRIDGE IN ACCOUNT CURRENT FROM DECEMBER 1, 1896, TO

Dr.

To authorized payments charged to City Accounts: —	
Abatements—Taxes	$22,081 73
Ambulance Department	208 45
Assessors' Department	13,139 98
Auditing Department	3,515 28
Bridge Department	14,600 45
Cemetery Department	19,008 46
Cemetery Fund	3,797 25
City Clerk's Department	7,123 20
City Messenger's Department	2,850 24
Civil Service Department	248 07
Clerk of Committees' Department	3,940 95
Contingent Fund	8,875 14
Election Expenses: —	
City Clerk	4,919 97
Registrars of Voters	3,600 56
Superintendent of Buildings	1,353 34
Engineering Department	11,045 99
Engineering Department — Assessors' Plans	2,116 52
Executive Department	5,325 18
Fire Department	78,828 36
Health Department	16,307 88
Inspection of Milk and Vinegar Department	1,612 70
Inspection of Provisions Department	789 55
Inspection of Wires Department	9,952 51
Interest	134,396 40
Lamp Department	68,583 67
Land Damages: —	
Boylston Street	36,862 50
Charles and Vine Streets	3,141 60
Commercial Avenue	2,000 00
Eighth Street	5,179 20
Eliot Street	3,346 45
Inman Street	225 00
Magee Street	579 92
Massachusetts Avenue	110 00
Mount Auburn Street	1,200 00
Law Department	4,827 83
Loan: —	
Temporary	600,000 00
Water	16,000 00
Overseers of the Poor Department: —	
Almshouse	20,797 12
Farm and Ledge	12,131 51
House Offal	25,931 18
Outside Aid	47,930 69
Salary City Physician	1,500 00
Park Department: —	
Construction and Lands	159,469 57
Interest on Park Loan	27,800 00
Maintenance	12,161 15
Sinking Fund	12,500 00
Plumbers' Examiners Department	101 05
Police Department	113,969 95
Public Library Department: —	
Current Expenses	19,245 95
East Cambridge Branch	629 91
Public Property: —	
City Buildings, Care and Repairs	27,897 85
Heating City Hall	1,602 75
Incidentals	5,487 54
Land for School House, Ward Three	3,500 00
Land for School House, Ward Five	6,200 00
New Engine House, Ward Five	5,495 53
New Latin School House	99,682 62
New School House, Ward One	15,795 08
New School House, Ward One — Furniture	2,767 19
New School House, Ward Three	271 45
Amount carried forward	$1,734,562 42

NOV. 30, 1897 (INCLUSIVE), WITH WM. W. DALLINGER, CITY TREASURER.

Cr.

By Receipts as follows: —

Betterments — Aberdeen Avenue	$268 50
Bridge Department	796 74
Cemetery Department	19,644 05
Cemetery Fund	3,797 25
City Clerk's Department	2,552 25
Contingent Fund	966 41
Engineering Department	2,000 00
Fire Department	214 73
Inspection of Milk and Vinegar Department	150 50
Inspection of Wires Department	200 41
Interest	8,737 53
Law Department	2,100 00
Loan: —	
Charles River Improvement	50,000 00
Clay Land	20,000 00
Park	100,000 00
Paving	20,000 00
School House	109,500 00
Street	11,000 00
Temporary	600,000 00
Water	375,000 00
Overseers of the Poor Department: —	
Almshouse	1,435 58
Farm and Ledge	15,683 63
House Offal	7,228 79
Outside Aid	5,144 79
Park Betterments	10,889 41
Park Department: —	
Construction	3,406 46
Interest on Park Loan	223 60
Maintenance	75 17
Plumbers' Examiners Department	72 00
Police Department	7,043 90
Premium Account	13,351 75
Public Library Department — Current Expenses	4,272 94
Public Property — City Buildings, Care and Repairs	3,872 62
School Department: —	
Salaries	2,463 02
Text-Books and Supplies	311 86
Sealer of Weights and Measures Department	551 08
Sewer Department: —	
Construction — General	14,012 19
Maintenance	2,166 14
Tannery Brook	2,684 60
State Aid	14,160 50
Stationery and Printing Department	1,201 82
Street Department: —	
Gravel Bank	6,000 00
Maintenance	11,043 92
Paving — Edgestones and Sidewalks	19,934 45
Watering	16,240 74
Tax. —	
Corporation	80,158 88
National Bank	16,086 87
Amount carried forward	$1,586,645 08

CITY OF CAMBRIDGE IN ACCOUNT CURRENT FROM DECEMBER 1, 1896, TO

Dr.

Amount brought forward	$1,734,562 42
New Shooting Range	731 80
Sanitary Arrangements — School Houses	5 00
School Houses, Care and Repairs	60,269 63
School Department: —	
Board of Truants	2,403 72
Flags	1,037 40
Incidentals	1,250 72
Salaries	259,797 42
Text-Books and Supplies	17,466 83
Transportation of Pupils	529 50
Sealer of Weights and Measures Department	1,597 33
Sewer Department: —	
Clay Lands	9,861 90
Construction — General	32,048 20
Maintenance	22,651 56
Metropolitan Connections	1,030 23
Tannery Brook	1,159 36
Sinking Fund Department: —	
General	96,725 00
Harvard Bridge	8,000 00
State Aid	23,632 16
Stationery and Printing	2,960 87
Street Department: —	
Bridges	7,784 41
Cleaning Streets	24,102 04
Collection of Ashes	19,363 50
Construction: —	
Boylston Street	2,252 53
Clay Lands	54,055 37
Dunster Street	7 81
Eighth Street	711 45
Eliot Street	1,677 93
Gravel Bank	7,000 00
Magee Street	1,020 07
New City Stable	30,939 45
Maintenance	73,055 50
Paving — Edgestones and Sidewalks	49,194 04
Paving — Sidewalk around Public Library	2,499 17
Rebuilding Massachusetts Avenue	39,547 56
Resurfacing Webster Avenue	960 05
Watering	25,475 10
Tax: —	
County	73,887 84
Metropolitan Sewer	137,297 30
National Bank	7,995 91
State	54,600 00
Tax Lien Account	3,104 48
Treasury Department	14,208 19
Water Works Department: —	
Construction: —	
General Account	11,260 32
Fresh Pond Reservoir	16,654 58
Hobbs Brook Reservoir	413,468 66
Payson Park Reservoir	80,225 24
Maintenance: —	
General Account	24,932 85
Office Expenses	5,642 68
Pumping	12,674 76
Renewal of Main Pipe	32,699 48
Stony Brook Reservoir	988 24
Interest on Water Loan	105,134 00
Rates, Fines, etc. — Abatements	5,852 15
Rates, Fines, etc. — Refunds	2,806 93
Sinking Funds	95,558 27
Supplies	6,354 27
Supplies — Abatements	917 54
Total Payments	$3,723,630 72
Cash Balance in Treasury, Nov. 30, 1897	155,833 28
	$3,879,464 00

NOV. 30, 1897 (INCLUSIVE), WITH WM. W. DALLINGER, CITY TREASURER.

Cr.

Amount brought forward	$1,586,645 08
Taxes: —	
1891	235 65
1892	267 20
1893	147 48
1894	1,029 60
1895	3,741 92
1896	205,653 61
1897	1,318,179 24
Treasury Department	2,407 85
Trustees of Sinking Funds of Water Works	16,000 00
Water Works Department: —	
Construction: —	
General Account	339 43
Hobbs Brook Reservoir	8,363 55
Payson Park Reservoir	3,469 16
Maintenance — General Account	3,474 93
Interest on Water Loan	892 00
Rates, Fines, etc.	301,150 92
Supplies	8,430 00
Total Receipts	$3,460,427 68
Cash Balance in Treasury, Nov. 30, 1896	419,036 32
	$3,879,464 00

Loans.

During the year the constructive work of the municipality has been continued and bonded indebtedness has been created to defray the cost of the same. The story of the year, however, so far as loan negotiations are concerned, is quite different from the experiences of the year 1896. Then the buyers of municipal obligations, acting under the shadow of the political uncertainty then prevailing, banked upon the doubts existing in the financial world and exacted of all borrowers payment for these doubts. In the beginning of 1897 these doubts had in a measure disappeared and investors purchased more freely.

In 1896 all of our bonded loans then issued bore interest at the rate of four per cent per annum. In 1897, under the more favorable conditions existing, all of our bonds have been written with interest at three and one half per cent. While a four per cent bond is undoubtedly more popular among investors, bringing, it is claimed, a higher price relatively, yet on the other hand the annual burden for the years to come is greater upon the tax payers, and when a good premiun is obtainable for a three and one half per cent it would seem to be correct judgment to issue bonds of this nature. The years 1893 to 1896 with their many and continuous financial disorders kept the rate for most State and nearly all municipal bonds at four per cent. For it may be noted, our solid gold-paying Commonwealth was unable in 1896 to sell a three and one half per cent bond. Now, however, it may reasonably be supposed the three and one half per cent rate may safely be attached to any municipal bond, for, barring financial panics, this rate has come to stay.

The improved condition of the money market in the year just closed is evinced by the sale of our bonds as well as by the rates obtained on short time loans. In 1896 our City issued $1,276,000.00 of long time bonds and they were sold upon a 3.52 per cent basis; that is, the buyer received for the capital he converted into these bonds 3.52 per cent for the whole time the bonds have to run. In

the same year we borrowed $786,000.00 in temporary loans in anticipation of taxes, for which we paid an average rate of 4.45 per cent. In the year 1897 we issued and sold $685,000.00 of long time bonds — running from ten to forty years, — on a 3.269 per cent basis. We also borrowed $600,000.00 of short time money upon an average rate of 2.991 per cent. Tables are hereto appended which give in detail an account of the negotiations of our bonded obligations and also of our temporary loans. Our net municipal debt — exclusive of water debt, — is 3.392 per cent on our valuation of 1897.

Fees.

During the year the Treasurer has received official fees amounting to $2,407.85, itemized as follows: —

For summonses on taxes	$1,336 35	
For making descriptions of advertisements .	382 00	
For advertisements published	246 50	
For posting notices of sale	229 00	
For making Collectors' deeds	107 00	
For making affadavits of sale	107 00	
		$2,407 85

These fees were all turned into the City Treasury as received.

Cemetery Fund.

This fund comprising sums received from owners of lots in our Cambridge Cemetery for the perpetual care of their lots therein amounts now to $40,184.58, and is invested as follows, viz: —

City of Cambridge	4	%	registered	bond	due	Nov. 1, 1903, for	$10,000 00
"	"	3½	% "	"	"	Nov. 1, 1906, "	7,000 00
"	"	4	% "	"	"	Nov. 1, 1907, "	2,000 00
"	"	4	% "	"	"	Nov. 1, 1909, "	2,000 00
"	"	4	% "	"	"	May 1, 1910, "	5,000 00
"	"	4	% "	"	"	Oct. 1, 1916, "	2,000 00
"	"	4	% "	"	"	Oct. 1, 1925, "	7,500 00
Deposited in Cambridgeport Savings Bank							4,684 58
							$40,184 58

Very respectfully,

WM. W. DALLINGER,

City Treasurer.

Particulars concerning the Bonds Negotiated during the Year ending November 30, 1897.

Date of Sale.	Amount.	Loan.	Years to run.	Rate of Interest.	Purchaser.	Price Paid.	Basis.
1897.				Per cent.			Per cent.
April 13...	$200,000	Water.	20	3½	Estabrook & Co.....	102.297	3.34
July 20...	100,000	School House.....	20	3½	Blodget, Merritt & Co.	103.186	3.28
Aug. 20...	100,000	Water.....	20	3½	James W. Longstreet & Co.....	103.078	3.29
Sept. 24...	100,000	Park.....	40	3½	N. W. Harris & Co.....	104.68	3.29
Nov. 26...	20,000	Paving	10	3½	Lee, Higginson & Co.....		3.215
Nov. 26...	11,000	Street	10	3½	Lee, Higginson & Co.....		3.215
Nov. 26...	20,000	Clay Land.....	15	3½	Lee, Higginson & Co.....	One price paid	3.215
Nov. 26...	50,000	Charles River Improvement	40	3½	Lee, Higginson & Co.....	for aggregate of these bonds. 104.70	3.215
Nov. 26...	75,000	Water.....	20	3½	Lee, Higginson & Co.....		3.215
Nov. 29...	9,500	School House.....	10	3½	Lee, Higginson & Co.....		3.215
	$685,500				Average basis about 3.269.		

Recapitulation.

Charles River Improvement Loan.....	$50,000	Schoolhouse Loan.....	$109,500
Clay Land Loan.....	20,000	Street Loan.....	11,000
Park Loan.....	100,000	Water Loan.....	375,000
Paving Loan.....	20,000	Total.....	$685,500

Temporary Loans, in anticipation of Taxes, negotiated in the year ending Nov. 30, 1897.

Date.	Maturity.	Amount.	
1897.	**1897.**		
Feb. 10.....	Oct. 11.....	$50,000	Discounted at 3 per cent per annum.
Feb. 26.....	Oct. 11.....	35,000	With interest at 3 " "
March 9.....	July 9.....	20,000	" " 3 " "
March 9.....	Oct. 12.....	25,000	Discounted at 3⅛ " "
March 9.....	Oct. 12.....	20,000	" " 3 " " "
March 26.....	Oct. 12.....	50,000	" " 3.18 " "
March 29.....	Oct. 12.....	50,000	" " 3.15 " "
July 2.....	Oct. 13.....	100,000	" " 2½ " "
July 10.....	Oct. 14.....	50,000	" " 2½ " "
Aug. 7.....	Oct. 15.....	75,000	" " 2½ " "
Aug. 12.. ..	Oct. 15.....	50,000	" " 2½ " "
Sept. 9.....	Oct. 15.....	50,000	" " 2½ " "
Sept. 10.....	Oct. 15.....	25,000	" " 2½ " "
		$600,000	Average rate 2.991 per cent.

REPORT OF THE COMMISSIONERS OF THE SINKING FUNDS OF THE CITY OF CAMBRIDGE

To the Honorable the City Council: —

The undersigned Commissioners of the Sinking Funds of the City, herewith present their twenty-second annual report covering the year ending November 30, 1897.

	Dr.	
The amount of the funds November 30, 1896, was	$581,668 24	
Received from the City the annual requirements for the year as appropriated by the City Council	116,860 00	
Received interest on invested funds	26,843 52	
		725,371 76
	Cr.	
Amount paid as accrued interest on investments purchased	$1,073 00	
Amount paid as premium on investments purchased	9,324 85	
Leaving the amount of the funds November 30, 1897	714,973 91	
		$725,371 76

SECURITIES BELONGING TO THE SINKING FUNDS, NOVEMBER 30, 1897.

Cambridge Street Widening Loan, six per cent bonds, due July 1, 1904	$90,000 00	
Cambridge Sewer Loan, six per cent bonds, due, July 1, 1904.	2,000 00	
Cambridge Street Widening Loan, six per cent bonds, due July 1, 1905	14,000 00	
Cambridge Sewer Loan, six per cent bonds, due July 1, 1905	49,000 00	
Amount carried forward		$155,000 00

Amount brought forward		$155,000 00
City of Fitchburg, 3½ per cent bonds, due April 1, 1898	$10,000 00	
City of Cleveland, four per cent bonds, due Sept. 1, 1898	1,000 00	
City of Dayton, four per cent bonds, due Oct. 1, 1898	4,000 00	
Town of Winchester, four per cent bonds, due Oct. 20, 1898	13,000 00	
City of Providence, 4½ per cent bonds, due June 1, 1899	64,000 00	
City of Brockton, four per cent bonds, due June 1, 1899	4,000 00	
City of Quincy, four per cent bonds, due July 1, 1900	500,00	
City of Gloucester, four per cent bonds, due May 1, 1901	4,000 00	
City of Brockton, four per cent bonds, due June 1, 1901	3,000 00	
City of Quincy, four per cent bonds, due July 1, 1901	2,500 00	
City of Somerville, four per cent bonds, due July 1, 1901	16,000 00	
City of Brockton, four per cent bonds, due Dec. 1, 1901	4,000 00	
City of Gloucester, four per cent bonds, due May 1, 1902	4,000 00	
City of Quincy, four per cent bonds, due July 1, 1902	7,500 00	
City of Somerville, four per cent bonds, due July 1, 1902	14,000 00	
City of Cleveland, 3 $\frac{65}{100}$ per cent bonds, due Sept. 1, 1902	1,000 00	
City of Brockton, four per cent bonds, due Dec. 1, 1902	4,000 00	
City of Brockton, four per cent bonds due June 1, 1903	4,000 00	
City of Quincy, four per cent bonds, due July 1, 1903	7,500 00	
City of Brockton, four per cent bonds, due Dec. 1, 1903	4,000 00	
Amounts carried forward	$172,000 00	$155,000 00

Amounts brought forward	$172,000 00	$155,000 00
City of Brockton, four per cent bonds, due June 1, 1904	4,000 00	
City of Quincy, four per cent bonds, due July 1, 1904	7,500 00	
City of Lawrence, four per cent bonds, due July 1, 1904	12,000 00	
City of Pawtucket, four per cent bonds, due July 1, 1904	15,000 00	
Town of Hopkinton, four per cent bonds, due Sept. 30, 1904	5,000 00	
City of Brockton, four per cent bonds, due Dec. 1, 1904	4,000 00	
City of Quincy, four per cent bonds, due July 1, 1905	7,000 00	
City of Haverhill, four per cent bonds, due Oct. 1, 1905	50,000 00	
City of Brockton, four per cent bonds, due Dec. 1, 1905	4,000 00	
City of Gloucester, four per cent bonds, due May 1, 1906	2,000 00	
City of Quincy, four per cent bonds, due July 1, 1906	1,000 00	
Fitchburg R. R. four per cent bonds, due April 1, 1907	50,000 00	
City of Somerville, four per cent bonds, due July 1, 1908	8,000 00	
City of Pawtucket, four per cent bonds, due July 1, 1909	30,000 00	
Town of Beverly, four per cent bonds, due July 1, 1911	9,000 00	
City of Medford, four per cent bonds, due July 1, 1911	26,000 00	
Boston & Lowell R. R., four per cent bonds, due Feb. 1, 1913	1,000 00	
City of Medford, four per cent bonds, due July 1, 1915	23,000 00	
City of Brockton, 3½ per cent bonds, due July 1, 1916	5,000 00	
Boston & Lowell R. R., four per cent bonds, due July 1, 1916	10,000 00	
Amounts carried forward	$445,500 00	$155,000 00

Amounts brought forward	$445,500 00	$155,000 00
Fitchburg R. R., four per cent bonds, due July 1, 1916	10,000 00	
Town of Stoughton, four per cent bonds, due June 1, 1920	2,000 00	
Town of Reading, four per cent bonds, due June 1, 1922	5,000 00	
Town of Reading, four per cent bonds, due June 1, 1923	5,000 00	
City of Medford, four per cent bonds, due July 1, 1923	2,000 00	
Old Colony R. R. four per cent bonds, due Dec. 1, 1925	50,000 00	
Fitchburg R. R. four per cent bonds, due March 1, 1927	40,000 00	
		559,500 00
		$714,500 00
Cash in Bank		473 91
		$714,973 91

CAMBRIDGE, December 14, 1897.

To the Board of Commissioners of the Sinking Funds of the City of Cambridge:—

Your Committee appointed to examine the accounts of the Treasurer of the Funds respectfully reports that his books are carefully and accurately kept and his accounts are correct and properly vouched. A computation of the cash and bond transactions for the year has been made independently of the Treasurer's books and the present amount of the funds as shown by his books is thus verified.

The following statement shows the transactions of the Treasurer and Sub-Committee on investment during the year and also the present condition of the Fund:—

BOND ACCOUNT.

Amount of bonds in the funds, Nov. 30, 1896	$581,500 00	
Amount of bonds purchased during the year	163,000 00	
	$744,500 00	
Amount of bonds matured during the year	30,000 00	
Amount of bonds in the funds, Nov. 30, 1897		$714,500 00

CASH ACCOUNT.

Cash on hand, Nov. 30, 1896	$168 24		
Cash received from the City derived from taxation	116,860 00		
Cash received from interest on investments	26,843 52		
Cash received from matured bonds	30,000 00		
		$173,871 76	
Cash paid for premium on bonds purchased	$9,324 85		
Cash paid for bonds purchased	163,000 00		
Cash paid for accrued interest on bonds purchased	1,073 00		
		173,397 85	
Cash on hand Nov. 30, 1897, deposited in the First National Bank of Cambridge			473 91
Total amount of funds, Nov. 30, 1897, all bonds taken at par value			$714,973 91

FRANK A. ALLEN,
JOHN C. BULLARD, } *Committee on Accounts.*

Since our last report, no portion of the City Debt proper has matured, and consequently the fund has increased $133,305.67, making the total amount of the fund $714,973.91. During the

year, City Bonds (3½ per cent) to the amount of $310,500.00 have been issued for the following purposes, viz : —

Schoolhouse Bonds, to the amount of $100,000.00, dated July 1, 1897, payable in twenty years.

Park Loan Bonds, to the amount of $100,000.00, dated September 1, 1897, payable in forty years.

Paving Loan Bonds, to the amount of $20,000.00, dated October 1, 1897, payable in ten years.

Charles River Improvement Bonds, to the amount of $50,000.00, dated November 1, 1897, payable in forty years.

Clay Land Bonds, to the amount of $20,000.00, dated November 1, 1897, payable in fifteen years.

Street Loan Bonds, to the amount of $11,000.00, dated November 1, 1897, payable in ten years.

Schoolhouse Bonds, to the amount of $9,500.00, dated November 1, 1897, payable in ten years.

The City Debt has now reached its maximum and represents the largest amount in the history of the city. The total amount of the City Debt proper, now outstanding, is $3,623,500.00, from which deducting the present assets of the fund at their par value, $714,-973.91, leaves the net amount of bonded debt, November 30, 1897, exclusive of the water debt, $2,908,526.09, showing a net increase of debt for the year, above the earnings of the fund, of $177,194.33. The valuation of the city as returned by the Assessors for 1897, is $86,641,745.00, which shows an increase of $2,891,650.00, over the valuation of 1896. There will be due the fund from taxation for 1898, the sum of $126,312.50. There will mature in 1898, City Bonds to the amount of $83,000.00.

The following schedule shows the amount of bonds issued for the past five years for city purposes, with the amounts paid from the fund for matured bonds, also the net amount of the debt for each year during this period, and the net valuation of the city each year.

Bonds Issued.	Amount.	Bonds Paid from Fund.	Net Debt.	Net Valuation.
In 1893	$50,000 00	$273,000 00	$1,583,184 86	$75,272,413 00
In 1894	635,000 00	130,000 00	2,092,710 95	76,091,754 00
In 1895	280,000 00	245,000 00	2,244,183 47	80,059,191 00
In 1896	611,000 00	54,000 00	2,731,331 76	83,014,751 00
In 1897	310,500 00		2,908,526 09	85,736,730 00
	$1,886,500 00	$702,000 00		

Total bonds issued in five years, $1,886,500.00.
Total bonds paid, $702,000.00.

Respectfully submitted,

CHAS. H. SAUNDERS,
FRANK A. ALLEN,
GEO. H. HOWARD,
JOHN C. BULLARD,
ANDREW J. LOVELL,
J. HENRY RUSSELL,

Commissioners of the Sinking Funds of the City of Cambridge.

Cambridge, December 17, 1897.

REPORT OF THE TRUSTEES OF THE SINKING FUND OF THE CAMBRIDGE WATER WORKS

To the Honorable the City Council: —

The undersigned Trustees of the Sinking Fund of the Water Works herewith submit their annual report of the fund committed by law to their charge. The report covers the year ending November 30, 1897.

	Dr.	
Amount of the fund November 30, 1896 . .	$369,347 02	
Received during the year as follows:—		
From the Treasurer of the City of Cambridge the annual required appropriation from water rates	91,091 00	
Also from the same source the surplus remaining at the close of the year in the maintenance accounts of the Water Works	4,467 27	
From interest on investments	15,734 77	
		$480,640 06
	Cr.	
Amount paid as premium on investments purchased	$420 00	
Amount paid as accrued interest on investments purchased	81 78	
Amount paid the City Treasurer of Cambridge to meet maturing Water bonds	16,000 00	
Balance representing the amount of the fund November 30, 1897	464,138 28	
		$480,640 06

SECURITIES BELONGING TO THE SINKING FUND OF THE WATER WORKS, NOV. 30, 1897.

Cambridge Water Loan, five per cent bond, maturing July 1, 1898	$12,500 00
Amount carried forward	$12,500 00

Amount brought forward	$12,500 00	
Cambridge Water Loan, four per cent bond, maturing Oct. 1, 1916	65,100 00	
Cambridge Harvard Bridge Loan, four per cent bond, maturing Nov. 1, 1920 . . .	5,000 00	
Cambridge Contingent Loan, note dated Dec. 1, 1883, bearing four per cent interest	200,000 00	
		$282,600 00
City of Lynn, four per cent bond, maturing July 1, 1899	$11,000 00	
City of Boston, four per cent bond, maturing April 1, 1900	4,000 00	
City of Providence, five per cent bonds, maturing July 1, 1906	50,000 00	
City of Somerville, four per cent bonds, maturing July 1, 1910	8,000 00	
		73,000 00
		$355,600 00
Cash in Bank on interest		108,538 28
		$464,138 28

The bonded water debt which the foregoing fund is to pay, matures as follows, viz: —

July 1, 1898, five per cent	$12,500 00
Nov. 1, 1906, 3½ per cent	43,000 00
Oct. 1, 1907, four per cent	90,000 00
Nov. 1, 1907, four per cent	22,000 00
July 1, 1908, four per cent	46,000 00
Aug. 1, 1908, four per cent	25,000 00
July 1, 1909, four per cent	20,000 00
May 1, 1910, four per cent	288,000 00
July 1, 1910, four per cent	75,000 00
Sept. 1, 1910, four per cent	125,000 00
Jan. 1, 1911, four per cent	20,000 00
Oct. 1, 1911, four per cent	35,000 00
Jan. 1, 1912, four per cent	150,000 00
May 2, 1912, four per cent	75,000 00
Amount carried forward	$1,026,500 00

Amount brought forward	$1,026,500 00
Nov. 1, 1912, four per cent	45,000 00
Feb. 1, 1913, four per cent	100,000 00
Aug. 1, 1913, four per cent	50,000 00
April 1, 1915, four per cent	200,000 00
Aug. 1, 1915, four per cent	200,000 00
April 1, 1916, four per cent	100,000 00
July 1, 1916, four per cent	200,000 00
Aug. 1, 1916, four per cent	100,000 00
Oct. 1, 1916, four per cent	265,100 00
April 1, 1917, 3½ per cent	200,000 00
July 1, 1917, 3½ per cent	100,000 00
Nov. 1, 1917, 3½ per cent	75,000 00
April 1, 1924, four per cent	300,000 00
	$2,961,600 00

ALVIN F. SORTWELL,
ALBERT S. APSEY,
WM. W. DALLINGER.
} *Trustees of the Sinking Fund of the Cambridge Water Works.*

REPORT OF THE SUPERINTENDENT OF STREETS

To the Honorable, the City Council:—

GENTLEMEN:— In accordance with the requirements of the ordinance relating to streets, I have the honor to submit my fourth annual report, for the financial year ending November 30, 1897.

The accounts of the various appropriations of this department are here given in alphabetical order, as they appear on the City Auditor's monthly statement.

Bridges.

Appropriation			$8,000 00
EXPENDED.			
Draw-tenders' salaries,		$3,063 77	
Boylston Street Bridge:—			
Planking	$130 37		
Painting	15 75		
Repairs	20 65		
		166 77	
Brookline Street Bridge:—			
Double planking and timbers	$1,016 82		
House for draw-tender	259 20		
Sundry repairs	32 26		
		1,308 28	
River Street Bridge:—			
Planking	$98 09		
Painting	36 00		
Repairs	78 59		
		212 68	
Western Avenue Bridge:—			
Planking	$162 43		
Painting	24 75		
Repairs	84 49		
		271 67	
Amounts carried forward		$5,023 17	$8,000 00

NEW STABLE AT RAYMOND STREET YARD.

Amounts brought forward		$5,023 17	$8,000 00
First Street Bridge:—			
Planking	$183 07		
House for draw-tenders . .	217 00		
Repairs	38 15		
		438 22	
Third Street Bridge:—			
Planking, new timbers, etc.,	$967 42		
Painting	15 00		
Repairs	61 06		
		1,043 48	
Sixth Street Bridge:—			
Planking, new timbers, etc.	$485 80		
Painting	7 25		
Repairs	3 48		
		496 53	
Walden Street Bridge:—			
Planking	$55 75		
Painting	193 89		
		249 64	
Huron Avenue Bridge over Railroad:—			
Painting		238 53	
Huron Avenue Bridge over Pipeway:—			
Painting		126 76	
General Supplies and Sundries		383 07	
			7,999 40
Balance			$ 60

At the close of the year 1896, an examination of the bridges in charge of this department, showed the necessity for a larger appropriation for 1897 than had been made for a number of years, and although the Finance Committee found it impossible to make an appropriation for the full amount requested, considerable progress has been made toward putting these bridges in thorough repair.

The above classification shows the amount expended for repairs on each bridge, together with the salaries for draw-tenders and incidental expenses.

The rebuilding of the Boston side of the Brookline Street Bridge made a large outlay necessary on our part; the entire planking was stripped to the timbers and new double planking relaid and

several decayed timbers replaced. A new house for the draw-tender was also built there.

The Third Street Bridge was thoroughly overhauled, a number of old timbers taken out and replaced, the under planking renewed wherever necessary and new top planking laid over the entire bridge. A new and comfortable house for the draw-tenders was built on the First Street Bridge. At the Sixth Street Bridge a few new timbers were put in and the planking renewed.

The iron bridges over the Fitchburg Railroad at Walden Street and Huron Avenue were painted on the under side with a metallic paint to prevent scaling and the upper part of all these bridges was painted in the usual style.

The report of the examination of the bridges by the City Engineer's Department at the close of this year is here subjoined. With the exception of the rebuilding of the Wellington Street bridge and a new draw-tender's house at the River Street bridgel nothing more than the usual repairs will be necessary next year.

First Street Bridge.

This bridge is in good condition and will need only usual repairs. The dolphin below the bridge is broken and needs rebolting. Some provision should be made to give more assistance to vessels passing the draw, as they now swing over to the sides of the canal endangering buildings now standing on the sea-walls.

Third Street Bridge.

Only ordinary repairs are called for on this bridge. The face of the draw should also be replanked.

Sixth Street Bridge.

The hoisting gears of this bridge seem hardly sufficient for the work they are called to do, and if a ratchet and double gear could be supplied it would add much to the convenience, both of the public and of those in charge of the draw.

Nothing more than usual repairs need be looked for on this bridge during the coming year.

Brookline Street Bridge.

The pier between this and the Grand Junction R. R. bridge has been thrown out of line and the railings mostly torn off. The repair of this damage, together with replanking, as the old plank is worn away, will be all this bridge will need for a year to come. Some of the spur piles begin to show signs of decay, and the guard timber above the bridge is broken.

River Street Bridge.

This bridge is in good condition and will need only replanking of the roadway and a few planks on the sidewalk. The house provided for the draw-tenders is very inconvenient and should be replaced by one better suited to the needs of the men by whom it is used. One draw-arm should also be replaced and new chains should be furnished for raising the draw leaf.

Western Avenue Bridge.

The planking on the pier at this bridge needs some slight patching and two or three new waling pieces are required on the face toward the draw. New chains for raising the draw leaf will also be needed. No further repairs seem necessary beyond the usua replanking of the roadway.

Boylston Street Bridge.

There will be a few timbers needed to replace decayed sticks on the pier at this bridge. One timber in the draw leaf is beginning to decay and some trouble is experienced in locking the draw leaves. A draw lock such as is used at Western Avenue would be a valuable addition. This bridge should soon be rebuilt, as the timbering shows signs of decay, the outside stringers being in bad condition.

Walden Street Bridge.

The planking on this bridge will have to be renewed during the year, and the lower half of the fence is in need of a new coat of

paint. The portions of iron work exposed to the action of gases from passing locomotives are badly scaled and need some efficient protection to prevent the girders being so reduced in section as to render the bridge unsafe. Some of the floor beams and the main girders over the railroad tracks should be repainted at once and the iron in some way be protected from the direct action of the gases from the locomotives.

Huron and Fountain Avenue Bridge.

This bridge is in good condition and will probably need no special attention during the year. The water in the street could be turned so as to flow down Fountain Avenue, and thus free the bridge from a deposit of mud which is now brought down by each rain.

Wellington Street Bridge.

The abutment walls which are supposed to support this bridge are largely destroyed and the bridge timbers rest on temporary supports. A new bridge or a culvert should be built here at once.

Massachusetts Avenue and Alewife Brook.

The bridge rails need scraping and repainting, and the abutment masonry should be repainted. No other repairs seem necessary.

On the opposite page will be found a table showing the bridges in charge of this department, their length, width, date of construction and other particulars of interest.

Bridges Maintained Wholly or in Part by the City of Cambridge, and in Charge of Street Department.

Name of Bridge.	Location.	Material in Substructure.	Material in Superstructure.	Date of First Construction.	Total Length of Bridge.	Length in Cambridge.	Width of Bridge.	Width of Draw.	Draw Opening.	Surface Area of Bridge in Cambridge.
										Sq. ft.
Boylston Street Bridge..	over Charles River.....	Oak Piles.....	Wood....	1662	208.0	106.0	28 ft.	20.35	36 ft.	2,830
Brookline Bridge.....	over Charles River.....	Oak Piles.....	Wood....	1850	750.0	175.0	31	24	36	5,299
First Street Bridge.....	over Broad Canal.....	Oak Piles.....	Wood....	1892	115.0	115.0	45	32	36	4,707
Fresh Pond Ave. Bridge.	over Pipe Way	Granite Masonry.	Steel.....	1893	75.0	75.0	58	....	....	4,350
Huron Avenue Bridge....	over Watertown Branch of the Fitchburg R.R..	Granite Masonry.	Steel.....	1893	93.63	93.63	58	....	....	5,430
River Street Bridge.....	over Charles River.....	Oak Piles.....	Wood....	1810	345.0	187.0	40	28	36.25	7,263
Sixth Street Bridge.....	over Broad Canal.....	Oak Piles.....	Wood....	1873	79.5	79.5	42	32	32.5	3,014
Third Street Bridge.....	over Broad Canal.....	Oak Piles.....	Wood....	about 1832	81.0	81.0	35	27	30	2,595
Walden Street Bridge....	over Fitchburg R. R.....	Granite Masonry.	Steel.....	1892	64.0	64.0	42	....	....	2,688
Western Avenue Bridge.	over Charles River.....	Oak Piles.....	Wood....	1824	330.0	168.0	34	27.5	36	5,595

Cleaning Streets.

Appropriation		$24,000 00
EXPENDED.		
Labor	$18,619 21	
Teaming	4,916 40	
Repairs to sweepers, etc.	231 86	
Hardware, tools, etc.	232 15	
		23,999 62
Balance		$ 38

The above amount has been expended as shown in cleaning streets and taking care of snow and ice. The cost for the latter was $4,876.00 ($3,041.50 in District No. 1, and $1,834.50 in District No. 2), an increase of a little over $1,300.00 above the cost last year, which was the lightest we have had for a number of years.

The three general cleanings of all the streets have been made as usual, the paved streets have been swept once every three weeks and crossings have been cleaned whenever necessary.

As was stated in our last annual report, I had hoped that provision could be made this year for largely increasing the force employed in the " section system," so called, of cleaning every day certain important sections of the city and having a man in each section responsible for its condition at all times. This system, inaugurated in 1894 with six men, has proven so satisfactory that the force has been increased from year to year and now consists of fifteen sections as follows: —

Massachusetts Avenue from Alewife Brook to Porter's Station.

Massachusetts Avenue from Porter's Station to Garden Street.

Massachusetts Avenue from Garden Street to Dana Street, including Harvard Square and Brattle Square.

Massachusetts Avenue from Dana Street to Central Square.

Massachusetts Avenue from Central Square to Lafayette Square, both inclusive.

Main Street from Lafayette Square to West Boston Bridge.

Cambridge Street from Dana Street to Windsor Street.

Cambridge Street from Windsor Street to Bridge Street.

Second, Third, Otis and Thorndike Streets, around County Buildings.

Mt. Auburn Street from Brattle Square to Watertown line.

Brattle Street from Brattle Square to Mt. Auburn Street.

Magazine Street, entire length.

Harvard Street from Dana Street to Main Street.

Garden Street and Concord Avenue.

Bridge Street and Prison Point Street.

More imperative needs of the city in other directions prevented any material increase in the appropriation, the increased cost of winter work largely exceeding the additional amount appropriated for this work and making it impossible to extend the system as desired. If we could increase the force next year to twenty-five men, I am confident that the improved condition of the city would repay the outlay, and the cost of regular cleaning in the fall, would, without doubt be materially decreased.

The usual amount of scrapings have been collected and disposed of, the quantity varying very slightly with that of last year, as here shown.

	Loads collected.	Loads sold.	Carted to dump.
1896	15,339	3,790	11,549
1897	15,586	2,178	13,408

Fifteen additional receptacles for waste paper, etc., have been added to the number placed throughout the city within the last two years, making about fifty now in use. Public appreciation of the value of these receptacles has been shown not only by their continued use, but by the requests of citizens for additional ones, and the immediate complaint if one is for any reason removed from its accustomed place. One source of annoyance and expense still remains, and I feel constrained to repeat the recommendation made last year, "that the distributing of hand-bills and flyers in the public streets be in some way regulated and placed under proper restrictions. In certain sections of the city this practice has become a positive nuisance, and as it frequently happens that these hand-bills, etc., are distributed on Saturday afternoon or evening,

after the section man has left the street in good condition, it is very discouraging on Sunday morning, when the uncleanliness of the streets is so much more noticeable, to find the sidewalks and gutters full of dirty paper and the streets in such an unsightly condition." I trust that some steps may be taken early in the year towards relieving the department of this unnecessary addition to the work of keeping the streets clean.

Collection of Ashes.

Appropriation		$20,000 00
EXPENDED.		
Labor	$16,569 50	
Hay, grain and straw	2,406 57	
Horses	422 50	
Harnesses, dressing, repairs, etc.	244 80	
Horse, and wagon covers	91 50	
Horse-shoeing, tools, etc.	28 50	
		19,763 37
Balance		$236 63

The above amount has been expended, as shown, for labor, care and feed of horses, and expenses incidental to the daily collection of ashes, and the collection of yard rakings, tree trimmings, brush, etc., as required by the ordinances, during the months of April, May and November.

Four new horses have been purchased for this department during the past year, to replace two that died and two that had become unfit for the service and have been sold. The regular force employed in this work remains the same as last year:— viz: sixteen teams, eight helpers and two dump-men: during the months of April, May and November, an extra team is put out in each district to take care of yard-cleanings, brush, etc., as required.

During the past year we have collected and disposed of 38,238 loads of ashes, etc., an average of about 125 loads per day; 7,162 loads were sold, and the remainder, 31,112 loads, were carted to the several dumps.

The question of convenient dumps for the first district, particularly for the ashes collected in Ward 3, and the eastern end of

Ward 2, is likely to become a quite serious one in the near future. The several lots in these localities at present used by this department for dumping places are already nearly filled up and the few other available places are being rapidly filled by the teams from the Ash Department of the City of Boston. I am not entirely certain that anything can be done to prevent this practice, which, beside decreasing the number of places which might be obtained for dumps for this department, has increased the cost of keeping clean the streets through which these ash teams pass.

Boylston Street (Widening).

Appropriation		$458 69
EXPENDED.		
Labor	$233 68	
Bricks	225 00	
		458 68
Balance		$ 01

The above amount was the unexpended balance from the appropriation for widening Boylston Street, and was expended for laying brick sidewalks which we were unable to complete last year.

Eighth Street.

Appropriation		$711 45
EXPENDED.		
Labor	$240 17	
Teaming	121 50	
Edgestone	169 78	
Gravel	180 00	
		$711 45

By an order approved October 22, 1896, Eighth Street was extended from Thorndike Street to Spring Street, and laid out to a width of forty feet between the points named. As the order was passed too late to enable us to do any work on the street in that year, the appropriation was carried forward in the budget for 1897.

The street has been widened to the width above named, edgestones have been set on both sides, the roadbed filled to grade and finished with gravel, and the improvement thus made will undoubtedly materially assist in the development of the property in that locality.

Eliot Street.

Appropriation		$1,074 05
EXPENDED.		
Labor	$235 25	
Teaming	100 13	
Brick	738 12	
		1,073 50
Balance		$ 55

In connection with the widening of Boylston Street, and the relocation of the street railway tracks there, the line of Eliot Street was changed so as to give a width of 70 feet its entire length by an order approved March 25, 1896.

The street was brought to grade and macadamized, edgestones set and gutters built on both sides during the season of 1896, and the unexpended balance, being the amount shown above, was carried to this year's accounts, and was expended in finishing the work by laying brick sidewalks on both sides of the street where needed.

Gravel Bank.

Appropriation	$7,000 00

Towards the close of the year 1896 negotiations were opened for the purchase of a lot of land, consisting of about thirty-two acres and located on the line of the Fitchburg Railroad, in South Acton, for the use of this department as a gravel bank. A large amount of gravel had already been taken from it, some of it having been used by the department, and its quality for paving purposes was assured. In March of the present year, the purchase was consummated, the price paid for the land being the amount appropriated as shown above. The wisdom of this purchase seems to be fully demonstrated by the saving already made in filling the new streets in the "Clay Lands" district and the amount of paving gravel taken from the bank this year.

Nearly sixty-two thousand yards of filling were used on the streets above mentioned and about five thousand yards of paving gravel were consumed in sidewalk work. The value of this filling and gravel exceeds by nearly one thousand dollars the amount paid

STALL ROOM, RAYMOND STREET STABLE.

for the gravel bank and there still remains a supply of paving gravel sufficient for the needs of this department for more years than any reader of this report can hope to live. A spur track running along the face of the bank from the main line of the Fitchburg Railroad was included in the purchase and the cars are loaded by laborers employed in the vicinity at a very moderate cost per yard.

Magee Street (Widening).

Appropriation		$2,352 00
EXPENDED.		
Labor	$515 00	
Teaming	344 27	
Edgestone, circle and gutter-stone	374 56	
Field and ballast-stone	400 03	
		1,633 86
		$718 14

By an order approved June 12, 1897, Magee Street from Putnam Avenue easterly 344 feet was laid out and widened to forty feet, making the street a uniform width its entire length. Edgestones were set on both sides of the street, the road-bed brought to grade and macadamized to a depth of one foot. On account of delays in the settlement of claims, etc., we were unable to complete the work until the middle of November, and the unusual amount of rain during the latter part of that month has so injured the street that a part of the unexpended balance will be needed for resurfacing next spring.

New City Stable.

Appropriation		$30,044 86
EXPENDED.		
Architects' plans, etc.	$421 88	
Builders' contract	26,303 22	
Carriage elevator	200 00	
Heating plant	295 00	
Balance on foundation	368 75	
Plumbing	238 15	
Stall releasers	50 00	
Amounts carried forward	$27,877 00	$30,044 86

Amounts brought forward	$27,877 00	$30,044 86
Fire alarm box	50 00	
Iron fence	75 00	
Hardware, etc.	319 77	
Electric wiring, lamps, etc.	211 83	
Water supply	78 24	
Shades and sundries	39 40	
Labor-sheds and yard	415 48	
Carpentry, sheds, etc.	263 50	
Lumber, lime, etc., sheds, etc.	247 20	
Stone, sods, etc., sheds and yard.	262 01	
Spur track, Fitchburg Railroad	200 00	
		30,039 43
Balance		$5 43

The development of the Park system along the Charles River, west of Boylston street, compelled us to vacate the somewhat insufficient quarters at the foot of Ash street, leased from the Cambridge Gas Light Company, and made it necessary for this department to secure a new location for a stable and yard for the second district. Accordingly on March 4, 1896, an order was approved making an appropriation of $11,000.00 for the purchase of a lot of land, consisting of about seven acres, located at the foot of Raymond street in Ward 5. On July 2 of the same year a further appropriation of $33,000.00 was approved for the construction of buildings and for grading the land for yard purposes. The necessary details of preparing plans, advertising for proposals, etc., consumed so much time, that at the close of the financial year of 1896 little had been done, except the foundation, towards the construction of the buildings. The unexpended balance was re-appropriated in the budget for 1897, and a glance at the figures above will show the cost of the various items which entered into the amount expended for the completion of the work. The stable was completed and opened to public inspection on June 25, and was occupied by the department on the following day. The unanimous opinion of those present at the opening, was that the department now had the most complete and best equipped stable of its size in New England. An idea of the general appearance of

CARRIAGE ROOM, NEW STABLE, RAYMOND STREET.

the stable and other buildings, may be obtained from the four cuts printed in this report, made from photographs taken in July last, and a brief description may not be uninteresting.

The stable, built of brick with red stone trimmings, has a frontage on Raymond Street of one hundred and eight feet and a depth of one hundred and forty-five feet and is one and a half stories above the basement. In the main stable room are forty-five single and two box stalls of the most approved design, all thoroughly drained and connected with a complete sewerage system. The floors here are of rock asphalt, as are also the floors of the adjacent harness and wash rooms; the mangers in the stalls are so constructed as to make it possible to shut the horse off from feeding whenever wished, and fed from a corridor running along at the back; in each stall the water is brought in by an automatic system, by which it remains at an even depth in all the stalls after the horses have done drinking; four patent oat cleaners screen the oats as they are sent down from the grain loft above; in case of fire or any emergency, every horse in the stable can be instantly released from his stall by a single turn of the hand.

In addition to the rooms mentioned, on this floor are the office and a large, light carriage room. In the second story are the hay and grain storage lofts, and a large room for sleighs and wagons not in use. A large, strong elevator for carriages and the like, finished to correspond with the finish of the building, makes it possible to handle carriages, wagons, etc., with the least expense of time and labor. Over the carriage room is an attic for putting away unused harnesses and tools. Very complete arrangements have been made in the basement. A furnace is in operation in the cold weather supplying heat to the office and other parts of the building through a hot-water system. A large tool room contains the picks, shovels, hoes, lanterns, etc., used in the district, all being kept securely under lock and key. A sizable room is kept for men to eat their dinners in while their horses have been put up for the noon hour, a convenience very much appreciated the first two days of every week, when the entire force engaged in the collection of ashes puts up there. This room is heated by a stove, and has a number of

convenient things about it to make it a pleasant place for the men.

The area directly under the stable floor is reserved for wagons in steady use; they can be driven here and taken out again very easily over a small driveway built at a slight angle. A carpenter shop is located next to the eating room and next to the tool room is the coal room. Connecting with the yard there is an outside run of hard pine, leading up to the level of the stable floor, which also serves as a drying place for the straw. The excellent system of electric lighting was put in by the City Inspector of Wires, as was also the fire alarm box located in the carriage room just outside the office door.

The contractors, Messrs. Mack & Moore of Boston are entitled, to credit for the thorough manner in which their work has been performed, and the appearance of the building is sufficient testimony to the ability of the architect, Mr. George Fogerty of Cambridge.

Competent authorities from other cities who have seen it, congratulate Cambridge on the completion of a building so admirably adapted to the purposes of its construction. Its advantages will be demonstrated clearly as it is kept in operation from year to year to supply the needs of the department.

North of the stable building, a shed one-hundred and forty-nine feet long, for the housing of watering-carts, tip-carts, etc., has been constructed, with two steam-roller houses and blacksmith shop adjoined. A new stone-crusher has been purchased and located in the yard, the boiler, engine, elevator and bins formerly located at the Tannery Street Ledge being transferred there. A pair of standard scales of twelve tons' capacity is set in the yard for weighing field-stone, etc. One side of the yard abuts for a considerable distance on the line of the Fitchburg Railroad and a spur track leading into the yard has been laid at a very slight expense, which enables us to handle stone, gravel, etc., coming over that line at a great saving, both in labor and teaming.

PLAN OF NEW STREETS AT CLAY LAND DISTRICT

NO. CAMBRIDGE

Aug 5, 1896 Scale 120 Ft. = 1 inch

W A Mason & Son Surveyors Cambridgeport

New Streets (Clay-Land District).

Appropriation		$55,000 00
EXPENDED.		
Labor	$9,838 50	
Teaming	8,739 21	
Filling from gravel bank	6,000 00	
Transportation and loading filling, as per contract	26,831 20	
Freight on gravel and filling	560 00	
Land and damages	1,650 00	
Moving railroad track	78 75	
Lumber for culverts	96 33	
Hardware, tools, etc.	236 42	
		54,030 41
Balance		$969 59

By an order approved July 2, 1896, a loan of $50,000.00 was authorized for the purpose of laying out thirteen new streets, six forty feet wide, and seven fifty feet wide, through land owned by the Bay State Brick Company on the northerly side of Concord Avenue between Walden Street and New Street. In the budget for 1897, provision was made for a further loan of $20,000.00 for this work.

The thirteen streets laid out as shown by the plan opposite this page have been filled to grade with material from the gravel bank owned by the city at South Acton, sixty-one thousand, seven hundred and ninety-eight cubic yards being used in the work. All the work that can be done at present by this department has been completed except the filling of a few spaces where the railroad tracks were laid, which can be done at slight expense. Nothing has been done towards surfacing these streets, and I assume it is not contemplated until the sewers, water-pipes, etc., are put in.

Maintenance.

Appropriation		$73,562 00
EXPENDED.		
Salary of Superintendent	$2,000 00	
Clerical Assistance	1,509 50	
Labor	36,790 31	
Teaming	1,148 17	
Field stone, and broke stone	12,460 59	
Gravel	509 87	
Hay, grain, and straw	6,045 41	
Steam rollers, repairs and supplies	308 07	
Stone crusher (new 12x24)	1,200 00	
Stone crushers, repairs and supplies	3,137 43	
Fuel and light	1,854 63	
Hardware, tools, etc.	1,358 13	
Horses	512 50	
Harnesses, new and repairs, horse clothing, carriage and wagon repairs, etc.	993 85	
Stable repairs (lumber, cement and masonwork)	1,204 94	
Telephones, office-supplies, Committee expenses, rent of wharf, etc.	1,294 86	
Platform scales (Raymond Street yard)	230 25	
Pumping Clay-pit (Raymond Street yard)	275 00	
Paints, Oils, etc.	264 55	
Stable supplies and miscellaneous	431 33	
		73,529 39
Balance		$32 61

The above summary briefly shows the expenditures under this appropriation; for more detailed accounts of the same, see City Auditor's report. This appropriation covers all the running expenses of the department, and while it is commonly understood that the amount appropriated is for the maintenance of the streets, as a matter of fact but little more than one-half the amount is available for actual street work.

The following schedule shows the streets graded in each of the districts, an itemized account of the cost of each street, and the total cost in each district: —

District No. 1 (Wards 2, 3 and 4).

Brookline Street from Henry Street to the bridge:—		
Labor	$325 50	
Teaming	610 87	
Rolling	112 50	
Cracked stone	990 00	
Gravel	56 50	
		$2,095 37
Charles Street from Third Street to Sixth Street:—		
Labor	$130 00	
Teaming	164 25	
Rolling	36 75	
Cracked stone	382 50	
Gravel	13 50	
		727 00
Franklin Street from Hancock Street to Soden Street:—		
Labor	$57 00	
Teaming	105 75	
Rolling	26 25	
Cracked stone	247 50	
Gravel	4 50	
		441 00
Green Street from Brookline Street to Sidney Street:—		
Labor	$77 50	
Teaming	85 88	
Rolling	31 50	
Cracked stone	262 50	
Gravel	5 25	
		462 63
Green Street from Putnam Avenue to Pleasant Street:—		
Labor	$423 50	
Teaming	333 00	
Rolling	129 50	
Cracked stone	967 50	
Gravel	8 25	
		1,861 75
Amount carried forward		$5,587 75

Amount brought forward		$5,587 75
Harvard Street from Moore Street to Hancock Street:—		
Labor	$600 00	
Teaming	544 50	
Rolling	225 75	
Cracked stone	1,997 50	
Gravel	9 50	
		3,377 25
Hayes Street from Putnam Avenue to Howard Street:—		
Labor	$11 00	
Teaming	11 25	
Gravel	17 50	
		39 75
Henry Street from Brookline Street to Chestnut Street:—		
Labor	$18 00	
Teaming	51 75	
Rolling	14 00	
Cracked stone	62 50	
Gravel	3 75	
		150 00
Inman Street from Austin Street to Harvard Street:—		
Labor	$40 50	
Teaming	72 00	
Rolling	17 50	
Cracked stone	172 50	
		302 50
Lambert Street from Cambridge Street to Gore Street:—		
Labor	$57 00	
Teaming	54 00	
Rolling	21 00	
Cracked stone	120 00	
Gravel	2 25	
		254 25
Massachusetts Avenue from B. & A. R. R. to Harvard Bridge:—		
Labor	$187 00	
Teaming	202 13	
Amounts carried forward	$389 13	$9,711 50

Amounts brought forward	$389 13	$9,711 50	
Rolling	73 50		
Cracked stone	645 00		
		1,107 63	
Massachusetts Avenue from Dana Street to Prospect Street:—			
Labor	$342 00		
Teaming	299 25		
Rolling	112 00		
Cracked stone	905 00		
		1,658 25	
Ninth Street from Spring Street to Vine Street:—			
Labor	$146 00		
Teaming	410 63		
Rolling	42 00		
Cracked stone	295 00		
Gravel	40 75		
		934 38	
Peters Street from Allston Street to Putnam Avenue:—			
Labor	$99 00		
Teaming	114 75		
Rolling	29 75		
Cracked stone	350 00		
Gravel	3 75		
		597 25	
Thorndike Street from First Street to Second Street:—			
Labor	$86 00		
Teaming	94 50		
Rolling	33 25		
Cracked stone	247 50		
		461 25	
Total amount of District 1			$14,470 26

District No. 2 (Wards 1 and 5).

Avon Hill Street from Bates to Huron Avenue:—			
Labor	$51 00		
Teaming	127 13		
Rolling	56 00		
Cracked stone	577 50		
Gravel	4 00		
		815 63	
Amounts carried forward		$815 63	$14,470 26

Amounts brought forward		$815 63	$14,470 26
Broadway from Irving Street to Trowbridge Street:—			
Labor	$170 00		
Teaming	168 75		
Rolling	66 50		
Cracked stone	362 50		
		767 75	
Buena Vista Park:—			
Labor	$2 00		
Teaming	14 63		
Cracked stone	35 00		
		51 63	
Baldwin Street from Cambridge Street to Kirkland Street:—			
Labor	$262 50		
Teaming	267 75		
Rolling	80 50		
Cracked stone	647 50		
Gravel	7 50		
		1,265 75	
Bolton Street (entire):—			
Labor	$18 00		
Teaming	92 25		
Gravel	15 75		
		126 00	
Church Street (entire):—			
Labor	$18 00		
Teaming	96 75		
Rolling	35 00		
Cracked stone	278 00		
		427 75	
Clifton Street (entire):—			
Labor	$73 50		
Teaming	36 00		
Rolling	10 50		
		120 00	
(377 loads of material from Massachusetts Avenue.)			
Dudley Street from Massachusetts Avenue to Cedar Street:—			
Labor	$52 00		
Rolling	8 75		
		60 75	
(328 loads of material from Massachusetts Avenue.)			
Amounts carried forward		$3,635 26	$14,470 26

Amounts brought forward		$3,635 26	$14,470 26
Foster Street from Sparks Street to Lowell St.:—			
Labor	$47 00		
Teaming	15 75		
Gravel	2 50		
		65 25	
High Street from Holworthy Street, 400 ft.:—			
Labor	$97 00		
Teaming	128 25		
Gravel	55 25		
		280 50	
Hillside Avenue from Avon Hill Street, 400 ft.:—			
Labor	$5 00		
Teaming	9 00		
Rolling	7 00		
Cracked stone	65 00		
		86 00	
Irving Street from Broadway to Cambridge Street:—			
Labor	$106 00		
Teaming	119 25		
Rolling	21 00		
Cracked stone	332 50		
		578 75	
Massachusetts Ave. from Dana Street to Quincy Street:—			
Labor	$496 50		
Teaming	465 38		
Rolling	122 50		
Cracked stone	970 00		
		2,054 38	
Mill Street (entire):—			
Labor	$204 00		
Teaming	123 38		
Rolling	59 50		
Cracked stone	277 50		
		664 38	
Plympton Street from Dyke Street to Mt. Auburn Street:—			
Labor	$39 50		
Teaming	13 50		
Rolling	21 00		
Cracked stone	40 00		
		114 00	
Amounts carried forward		$7,478 52	$14,470 26

Amounts brought forward		$7,478 52	$14,470 26
Raymond Street from Linnæan St. to Huron Ave., and from Walden St. to Crescent Ave.:—			
Labor	$555 50		
Teaming	670 50		
Rolling	129 50		
Cracked stone	1,467 50		
Gravel	120 00		
		2,943 00	
Raymond Street from Walden Street to Huron Avenue:—			
Labor	$43 00		
Teaming	24 75		
Cracked stone	20 00		
Gravel	3 50		
		91 25	
Rindge Avenue from Cedar square to the end:—			
Labor	$49 00		
Teaming	92 25		
Rolling	31 50		
Cracked stone	47 50		
Gravel	18 00		
		238 25	
(255 loads of material from Massachusetts Avenue.)			
Walnut Avenue (entire):—			
Labor	$66 00		
Teaming	73 50		
Rolling	45 50		
Cracked stone	410 00		
		595 00	
Walden Street, sidewalks:—			
Labor	$77 50		
Teaming	48 25		
		125 75	
(No material used, sidewalks graded.)			
Wellington street, sidewalk:—			
Labor	$28 00		
Teaming	184 50		
Gravel	64 25		
		276 75	
Total amount District No. 2			11,748 52
Total amount of Districts 1 and 2			$26,218 78

In addition to the above amount expended for macadamizing streets, $7,211.50 in the first district, and $7,994.02 in the second district, making a total of $15,205.52, has been expended in "patching" and minute repairs on nearly all of the streets in the city.

It will thus be seen that the cost of macadamizing and patching, that is to say, what we have been able to expend for labor and materials actually used directly on the streets, amounts to about $41,000.00, considerably less than three-fifths of the appropriation, while the balance has been exhausted in the necessary expenses which enter into the cost of maintaining and operating a large department. We have at the present time about 89.4 miles of accepted streets, 5.4 miles of which are paved, leaving about 85 miles of gravel and macadam streets to be taken care of out of the appropriation above shown.

This amount might be sufficient if all of our streets had originally been properly constructed, but when the fact is taken into consideration that the foundation of many of our streets is of clay and that a considerable number of them have no foundation whatever, it will be understood that a great deal must be left undone each year, unless the appropriation for Maintenance is materially increased.

There are several important streets in the city through which the electric cars run that we find great difficulty in keeping in proper repair. These streets are: Prospect Street, from Central Square to Cambridge Street; Pearl Street, from Massachusetts Avenue to Putnam Avenue, Brookline Street from Massachusetts Avenue to Henry Street and Cambridge Street, from Prospect Street to Kirkland Street; all of these streets are subjected to a heavy traffic and the only way that they can be kept in satisfactory condition, is to pave them with granite blocks, or some other material equally durable. This would necessitate a too large expenditure to be undertaken in any one year, but I would recommend that if possible some portion of the work be provided for in the coming year, as it seems to me to be the most economical method in the long run, of keeping these streets in proper repair.

On December 10 last, a contract was made with the Aultman Company of Canton, Ohio, for a No. 5 stone crusher, having a

jaw opening of 12x24 inches, and a capacity of twenty-five tons per hour. The crusher was received and set up in January, and has been in operation during the past season.

A large amount of stone has been crushed by this machine, its output running at times to 225 tons per day; all the cracked stone used in the second district, including that used in rebuilding Massachusetts Avenue, has been made by this crusher and the saving in the cost of crushing and handling this stone has, during this one season, amounted to nearly three times the cost of the stone-crushing plant.

The present administration has concurred in the suggestion made in the last annual report that no new streets be accepted without making provision for putting them in proper condition, to the extent that only one short section of a street has been so accepted since January of this year, and in that case the street had been used as a public way for a great many years, and required but little repairing to put it in proper condition. In pursuance of this policy, petitions for the acceptance of streets have been referred to the City Engineer for estimates of the cost of putting them in condition for public use, and, if reported on favorably, an order will be offered at the same time for an appropriation sufficient to complete the work. Seven such petitions are at present in the files of the Committee, the total amount of the City Engineer's estimates being $5,027.90. On the next page will be found a list of streets laid out and grades established from December 1, 1896, to December 1, 1897.

STONE CRUSHING PLANT AT RAYMOND STREET YARD.

Streets Laid Out December 1, 1896, to December 1, 1897.

STREET.					PLAN.		
Name.	From	To	Length in Feet.	Width in Feet.	Accepted.	Made by	Date.
Buena Vista Park.....	Huron Avenue.....	Northerly.....	347.0	40	Dec. 4, 1896.	W. A. Mason & Son.	May 25, 1896
Binney Street.....	First Street.....	Commercial Ave...	235.25	50	Sept. 10, 1897.	City Engineer.....	May 14, 1897
Dudley Street.....	Massachusetts Ave	Cedar Street.....	440.7	40	May 5, 1897.	City Engineer.....	April 8, 1897
Foster Street.....	Sparks Street.....	Lowell Street.....	779.0	40	Dec. 4, 1896.	E. F. Bowker.....	Feb. 1, 1888
Magnolia Avenue.....	Baldwin Street....	Line Street.....	668.4	40	Dec. 4. 1896.	W. A. Mason & Son.	Aug. 19, 1896
Magee Street.....	Putnam Avenue...	Easterly	339.4	40	June 12, 1897.	City Engineer.....	June 30, 1896
Nutting Place.....	Mt. Auburn Street.	Southerly.....	260.0	30	Dec. 30, 1896.	W. A. Mason & Son.	June 8, 1896
Raymond Street.....	Walden Street.....	Crescent Avenue..	850.0	40	Dec. 4, 1896.	City Engineer.....	July 15, 1896
Seventh Street.....	Gore Street.....	Cambridge Street..	258.6	30	Oct. 6, 1897.	City Engineer.....	June 11, 1897
Willow Street.....	Cambridge Street..	York Street.....	959.0	40	Dec. 17, 1896.	City Engineer.....	Dec. 8, 1896
York Street.....	Willow Street.....	Berkshire Street...	515.0	40	Dec. 17, 1896.	City Engineer... ...	Dec. 8, 1896

Paving (Edgestones and Sidewalks).

Appropriation		$57,909 84
EXPENDED.		
Labor	$19,603 54	
Teaming	4,797 15	
Bricks	13,717 50	
Edgestones and circles	10,718 58	
Gutter and round stone	4,188 01	
Granite flagging	1,013 31	
Gravel	167 94	
Freight and loading gravel from bank at Acton	1,847 45	
Allowance on artifical stone sidewalks	1,071 02	
Lumber, cement, etc.	140 58	
Hardware, tools, etc.	386 59	
Labor, extra pavers	147 75	
Abatements and sundries	18 04	
		57,817 46
Balance		$92 38

When the annual budget was made up this year, an appropriation of $37,500.00 was made for this work and later in the year, the demand for new edgestones and brick sidewalks had become so great that a loan of $20,000.00 was authorized and an additional appropriation made of that amount. $409.84 was also transferred from other appropriations to this account.

The above amount has been expended for new edgestones and brick sidewalks and for repairs to sidewalks already laid; the laying and repairs of street crossings are also included in this appropriation.

Following is a list of the streets by districts, where crossing work has been done. This list does not include streets macadamized under special appropriations, but only work done and paid for out of the above appropriation.

Crossings, District No. 1.

	Cost.
Brookline Street at Henry Street (repairs)	$12 86
Cambridge Street at First Street (repairs)	10 06
Cambridge Street at Sixth Street (repairs)	23 95
Cambridge Street at Eighth Street	32 43
Charles Street at Sixth Street	68 48
Dana Street at Cambridge Street	54 40
Green Street at Brookline and Sidney Streets (2)	75 23
Hampshire Street at Portland Street (repairs)	10 75
Harvard Street at Dana Street (repairs)	26 50
Lafayette Square (repairs)	21 95
Lincoln Street at Columbia Street	51 90
Main Street at Austin Street (repairs)	16 15
Massachusetts Avenue at Brookline Street (repairs)	20 84
Massachusetts Avenue at Vernon Street	52 29
Massachusetts Avenue at Hancock Street	53 61
Massachusetts Avenue at Bay Street	56 36
Massachusetts Avenue at Dana Street (repairs)	6 87
Putnam Avenue at Riverside School	58 37
River Street at Fairmont Street (repairs)	13 25
State Street at Massachusetts Avenue (2)	167 86
	$834 11

Crossings, District No. 2.

Appleton Street at Highland Street	$102 18
Acacia Street at Ash Street	54 99
Ash Street at Mt. Auburn Street	43 08
Concord Avenue at No. 36	75 01
Cedar Street at Dudley Street	80 04
Dudley Street at Cedar Street	99 18
Elmwood Avenue at Elmwood Street	75 08
Elmwood Street at Elmwood Avenue	75 35
Garden Street near Observatory gate	89 67
Garden Street at Huron Avenue	133 65
Garden Street at Massachusetts Avenue	632 91
Huron Avenue at Mt. Vernon Street	88 12
Huron Avenue at Garden Street	113 71
Amount carried forward	$1,662 97

Crossings, District No. 2 — Concluded.

	Cost.
Amount brought forward	$1,662 97
Huron Avenue at Lake View Avenue	123 09
Huron Avenue at Lexington Avenue	148 08
Highland Street at Appleton Street	91 87
Hawthorn Street at Mt. Auburn Street	56 88
Harvey Street at Reed Street	38 25
Lowell Street at Hubbard Park	49 26
Lake View Avenue at Huron Avenue (repairs)	24 55
Mead Street at Cogswell Avenue	56 82
Mount Pleasant Street at Huron Avenue	61 11
Massachusetts Avenue at Dana Street (repairs)	26 27
Massachusetts Avenue at Ellery Street (repairs)	26 44
Oxford Street at Garfield Street	71 93
Prescott Street at Broadway	64 89
Raymond Street at Linnæan Street	50 74
Sparks Street at Brewster Street	64 95
	$2,618 10

The following tables show by districts the new sidewalk work done during the year, viz., the number of feet of new circles and edgestones set, and square yards of new brick sidewalk laid, with the expense on each street.

District No. 1.

STREETS.	Linear Feet Straight Edgestone.	Linear Feet Circle Edgestone.	Square Yards Brick Sidewalk.	Amount.
Amory Street, from Hampshire Street to Summer Street	852	16.4	....	$1,381 94
Antrim Street, at No. 45	89.4	....	64	197 61
Antrim Street, from No. 83 to 95	....	....	100.8	95 68
Antrim Street, at No. 131	38.6	....	33	86 38
Auburn Street, southeast corner Magazine	....	....	89	72 44
Brookline Street, west side from Auburn Street to Massachusetts Ave.	....	....	232.5	198 70
Cambridge Street, at No. 950	....	....	50.5	48 54
Cambridge Street, from No. 1218 to 1228	....	....	87	82 95
Cambridge Street, at Nos. 1525, 1527 and 1529	....	....	131.6	189 66
Cambrldge Street, from Willow Street, westerly, about 50 feet	6.4	....	77.6	87 00
Cambridge Street, from Line Street to Hospital Grounds	....	....	596	467 12
Cambridge Street, from Highland Avenue to Ellsworth Avenue	....	....	320.7	293 62
Charles Street, from Fifth Street to Sixth Street	384	....	325.3	710 27
Cherry Street, corner of Washington Street	154.3	....	..	144 56
Amounts carried forward	1,524.7	16.4	2,108.0	$4,056 47

District No. 1. — Continued.

STREETS.	Linear Feet Straight Edgestone.	Linear Feet Circle Edgestone.	Square Yards Brick Sidewalk.	Amount.
Amounts brought forward	1,524.7	16.4	2,108.0	$4,056 47
Columbia Street, from No. 236 to Market Street	....	....	57	87 30
Fayette Street, west side, corner of Broadway	89.5	....	81	197 78
Fayette Street, from No. 3 to No. 9	147	....	102.3	234 44
Fairmont Avenue, from No. 9 to No. 15	95.4	....	54	115 97
Florence Street, at Nos. 13 and 15	....	....	40.7	39 81
Fifth Street, from Vine Street to Charles Street	....	....	217.7	233 94
Franklin Street, from Pleasant Street to Western Avenue	66	....	....	86 77
Gore Street, at Nos. 35 and 37	....	....	60.6	65 63
Gore Street, from No. 32 to Third Street	....	....	189.7	167 23
Green Street, from Bay Street to Putnam Avenue	....	....	494.7	453 15
Grigg Street, from Howard Street to Dodge Street	341	9.6	....	398 28
Hampshire Street, corner of Portsmouth Street	....	30.2	....	48 63
Hampshire Street, from Portsmouth Street, southerly, 96 feet	84.8	....	150	235 12
Amounts carried forward	2,348.4	56.2	3,555.7	$6,420 52

District No. 1. — Continued.

STREETS.	Linear Feet Straight Edgestone.	Linear Feet Circle Edgestone.	Square Yards Brick Sidewalk.	Amount.
Amounts brought forward	2,348.4	56.2	3,555.7	$6,420 52
Inman Street, from Harvard Street to West Street	....	....	104.7	136 13
Jefferson Street, north side, from Warren Street to Harding Street	574.8	9.6	375	1,046 76
Jefferson Street, south side, from Marion Street to Harding Street	422	9.5	286.3	658 84
Magazine Street, east side from Tufts Street to Glenwood Avenue	193	....	181.5	367 99
Magazine Street, west side, from Florence Street to Parkway	....	....	247.2	218 88
Main Street, corner of Portland Street	....	21.8	...	31 21
Marion Street, from No. 17 to Cambridge Street	.....	....	109.4	103 78
Marion Street, from No. 15 to Jefferson Street	....	....	39	30 82
Marion Street, from No. 20 to Jefferson Street	....	....	34	39 02
Massachusetts Avenue, front of Southwick's block	....	....	163	160 00
Norfolk Street, both sides, from Hampshire Street to Somerville Line.	...	....	645	599 59
Norfolk Street, east side, from Hampshire Street about 530 feet	529.5	....	365	928 37
Osborn Street, east side, from State Street to Albany Street	349.3	17.7	....	342 21
Amounts carried forward	4,417.0	114.8	6,105.8	$11,084 12

District No. 1. — Concluded.

STREETS.	Linear Feet Straight Edgestone.	Linear Feet Circle Edgestone.	Square Yards Brick Sidewalk.	Amount.
Amounts brought forward	4,417.0	114.8	6,105 8	$11,084 12
Pleasant Street, at Nos. 26 and 28	....	....	92.3	80 47
Portland Street, at northeast corner of Main Street	43	6.5	41.4	119 68
Portsmouth Street, at Nos. 44 and 46	....	....	28.4	26 53
Portsmouth Street, from Hampshire Street easterly, 179 feet	172.2	....	156.5	365 80
Rockwell Street, both sides, from Pleasant Street to River Street	744.5	....	....	726 84
School Street, northeast corner of Cherry Street	....	....	130.3	117 61
School Street, north side, from Windsor Street to Clark Street	164	6.4	....	211 59
Spring Street, Nos. 170 and 176	....	....	106.2	95 20
Summer Street, south side, from Prospect Street to Amory Street	251.5	....	120.3	312 68
Vernon Street, east side, from Massachusetts Ave. to Green Street	114.2	....	204.3	371 47
Webster Avenue, at Nos. 85, 87 and 89	40.7	....	....	122 89
Webster Avenue, from Bristol Street to Portsmouth Street	97.2	9.6	....	135 61
Webster Avenue, from Plymouth Street to Lincoln Street	432.8	38.6	....	450 86
Willow Street, from Cambridge Street, southerly	94	....	138	231 35
Windsor Street, from No. 106 to 120	....	....	59.3	52 04
Windsor Street, from 109 to Washington Street	....	....	172.6	156 92
Totals, District No. 1	6,578.1	175.9	7,355.4	$14,661 66

District No. 2.

STREETS.	Linear feet Straight Edgestone.	Linear feet Circle Edgestone.	Square Yards Brick Sidewalk.	Amount.
Avon Hill Street, from Bellevue Avenue to Huron Avenue	155.8	....	....	$167 80
Avon Hill Street, from Huron Avenue to Hillside Avenue	650	24.6	....	958 55
Avon Hill Street, from Hillside Avenue to Linnæan Street	....	....	280.3	234 25
Avon Hill Street at No. 77	78.2	3.2	....	66 55
Baldwin Street, edgestone, both sides, brick, front of No. 50	1,767	59.6	65.8	2,107 14
Beech Street, north side, from Massachusetts Ave. to Somerville line	517.2	....	560	951 84
Blake Street, south side, from Massachusetts Avenue to Orchard	....	...	260	219 92
Broadway, south side, from Prescott Street to Quincy Street	....	....	142.8	139 50
Broadway, north side, from Irving Street to Quincy Street	360.5	25.4	835.2	1,091 48
Broadway, both sides, Cambridge Street to Quincy Street	286.5	....	577.4	866 64
Cambridge Street, south side, front of College grounds	169	....	217	406 86
Cambridge Street, south side, from Trowbridge Street to Maple Ave.	837.2	19.5	1,332	2,100 33
Cedar Street, at Nos. 33, 35 and 37	....	....	105.7	108 08
Cogswell Avenue, north side	....	....	198.1	188 06
Amounts carried forward	4,821.4	132.3	4,574.3	$9,607 00

District No. 2. — Continned.

STREETS.	Linear feet Straight Edgestone.	Linear feet Circle Edgestone.	Square Yards Brick Sidewalk.	Amount.
Amounts brought forward	4,821.4	132.3	4,574.3	$9,607 00
Concord Avenue, corner of Huron Avenue	59.5	....	123	198 88
Crescent Avenue, at Hews' Pottery	237	....	....	367 58
Davenport Street, from Orchard Street to Saginaw Avenue	124.5	19.2	....	207 21
De Wolf Street, from Arrow Street to Mount Auburn Street	....	....	....	88 84
De Wolf Street, both sides from Mill Street to Mount Auburn Street	601.9	....	578.6	1,090 10
Dudley Street, east side, at Sleeper School	170	....	115.3	234 07
Dunster Street, west side, near South Street	....	....	29.7	29 51
Ellery Street, east side, from Massachusetts Ave. to Harvard Street	....	....	281.5	310 25
Flagg Street, both sides, from Banks Street to Putnam Avenue	....	....	398.2	318 11
Gray Street, both sides, from Martin Street to Linnæan Street	929.8	...	....	774 66
Harvey Street, from No. 13 to the Church	64.8	9.6	....	75 25
Holyoke Street, east side, at Nos. 24 and 26	....	....	45.2	39 88
Holyoke Street, east side, at No. 28	65	....	47.8	139 29
Amounts carried forward	7,073.9	161.1	6,193.6	$13,480 63

District No. 2. — Continued.

STREETS.	Linear feet Straight Edgestone.	Linear feet Circle Edgestone.	Square Yards Brick Sidewalk.	Amount.
Amounts brought forward	7,073.9	161.1	6,193.6	$13,480 63
Hurlbut Street, at Nos. 4, 6 and 8	109.7	....	78.7	161 62
Huron Av., south side, from Mt. Vernon Street to Massachusetts Av.	541.3	....	512	968 91
Huron Avenue, south side, from Avon Hill Street to Raymond Street	348.1	....	....	350 35
Irving Street, both sides, from Cambridge Street to Kirkland Street	1,439.2	38	1,114.4	2,569 50
Kidder Street, north side	....	....	192.5	128 86
Martin Street, north side, from Massachusetts Ave. to Hurlbut St.	....	....	92.8	84 68
Mason Street, east side, from James Street to Brattle Street	....	....	65.8	58 72
Massachusetts Avenue, east side, from Dover Street to Meacham St.	....	....	465.3	484 45
Mount Auburn Street, north side, from Brattle Street to Boylston St.	....	....	107	114 38
Mount Pleasant Street, both sides, from Huron Ave. to Walden St.	794.4	24.9	575.5	1,469 92
Mount Vernon Street, east side, from Huron Avenue to the bend	119	14.4	178	426 54
Myrtle Avenue, both sides, from Magnolia Ave. to Kirkland Street	821.5	54.6	413	1,326 24
Norris Street, west side, from Massachusetts Ave. 145 feet westerly	142	....	96.2	217 47
Amounts carried forward	11,389.1	293.0	10,084.8	$21,842 27

District No. 2. — Concluded.

STREETS.	Linear feet Straight Edgestone.	Linear feet Circle Edgestone.	Square Yards Brick Sidewalk.	Amount.
Amounts brought forward	11,389.1	293.0	10,084.8	$21,842 27
Oxford Street, east side, from Wendell Street to Sacramento Street	196	....	293.7	393 33
Oxford Street, west side, from Wendell Street to Forest Street	....	....	1,044	1,062 05
Oxford Street, west side, from Everett Street to Kirkland Street	....	.. .	690.3	599 77
Parker Street, corner of Concord Avenue	29.8	17.7	....	103 84
Raymond Street, east side, corner of Hubbard and Crescent Avenues	41.6	59.4	....	140 44
Raymond Street, both sides, from Linnæan Street to Huron Avenue	2,359.2	46.7	....	2,363 56
Remington Street, west side, from Harvard St. to Massachusetts Av.	62	....	88	320 60
Rice Street, north side, from Rindge Ave. to Massachusetts Avenue	100	....	75.6	129 75
Rindge Avenue at No. 169	.. .	....	41.2	37 13
Sacramento Street at Agassiz School	....	....	102.3	79 14
Sparks Street, east side, from Brattle Street to Mt. Auburn Street	973.3	....	732	1,584 95
Walker Street, both sides, from Garden Street to Shepard Street	....	....	699.3	457 73
Ware Street, west side from Harvard Street to Broadway	604	....	600	1,294 38
White Street, south side, from White Street Place to Somerville line	278.6	....	150	445 73
Totals, District No. 2	16,033.6	416.8	14,601.2	$30,854 67

Reference to the foregoing tables will show that we have been able to expend a little more than $50,000.00 on new sidewalk work, which made it possible for us to clean up the accumulated orders left over from previous years, and to complete all but a few of this year's petitions which have been reported on favorably by the Standing Committee.

The amount of repairs to edgestones and sidewalks already laid has been larger than usual; 7,968 linear feet of edgestone have been reset and the three-foot gutter running alongside has been relaid where necessary; 4,764 square yards of brick sidewalk have been relaid.

On several of the residential streets in ward one, and on that portion of First Street adjacent to Ginn & Company's printing establishment, a desire was expressed in 1896 for something better than brick as a material for sidewalks. In all such cases, permission was granted to the abutters to contract with responsible parties for laying, at their own expense, artificial stone sidewalks, under the direction and to the satisfaction of the Superintendent of Streets; an allowance of six cents per square foot, based on the cost to the city for laying brick sidewalk, was paid by this department to the contractors, that amount being deducted from their bills to the abutters. Under this arrangement 15,178 square feet of artificial stone sidewalk was laid in that year, and following the same policy, sidewalks of this material have been laid during the past season on the following streets: —

	Square feet
Berkeley Street	791.1
Brattle Street	2,493.54
Buckingham Street	402.75
Craigie Street	509.85
Concord Avenue	1,465.92
Garden Street	1,471.86
Highland Street	822.6
Massachusetts Avenue and Main Street	2,925.
Sparks Street	429.75
Total	11,312.37

Where abutters are willing to pay the extra cost of these sidewalks a continuance of the present policy would seem wise, as the city has at present no facilities for doing the work, and the contractors agree to keep the walks in perfect repair for five years without expense to the city.

Sidewalks (around Public Library).

Appropriation		$2,500 00
EXPENDED.		
Labor	$667 29	
Teaming	142 88	
Edgestone	1,004 00	
Bricks	685 00	
		2,499 17
Balance		$ 83

In accordance with a recommendation in last year's report the above appropriation was made for laying brick sidewalks on Broadway, Cambridge, Irving and Trowbridge Streets, bounding the Public Library grounds. The work was completed early in the season and has been appreciated by visitors to the library and the public generally.

There still remain a number of public squares, buildings, etc., in front of which there are at present no sidewalks, and if an appropriation similar to the above could be made annually, in a few years all the sidewalks required might be laid. The most pressing needs at present are for sidewalks in front of the Manual Training School and around the large Common in Ward One.

Rebuilding Massachusetts Avenue.

Appropriation		$40,000 00
EXPENDED.		
Labor	$11,217 60	
Teaming	6,602 80	
Ballast stone	11,023 09	
Field and cobble stone	7,781 23	
Edgestones and circles	1,743 60	
Amounts carried forward	$38,368 32	$40,000 00

Amounts brought forward	$38,368 32	$40,000 00
Flagging and gutter stone	1,124 23	
Freight and loading field stone	300 68	
Weighing ballast stone	135 47	
Gravel and sundries	71 25	
		39,999 95
Balance		$ 05

For a number of years past, one of the chief problems which annually confronted this department, was the question as to the wisest method of permanent reconstruction of that part of Massachusetts Avenue between Harvard Square and the Arlington line, formerly known as North Avenue. This avenue, the widest, and, in many respects the most important in the city, subject to an immense amount of traffic from the towns adjourning us on the north, as well as a great deal of local heavy teaming, had in spite of the large amounts annually expended on it for repairs, become so badly worn that its condition was most deplorable and the subject of frequent complaint and criticism. In the annual report for 1895, the matter was called to the attention of the City Government and in last year's report several suggestions as to the method and cost of various pavements were offered. These suggestions were considered and discussed at a meeting of abutters on the Avenue and other interested citizens held at the Newtowne Clubhouse late in December last, at which the then Mayor-elect was also present. Strong opposition was developed to paving the avenue, either with bricks or granite blocks, on account of noise, and to asphalt paving because of expense and its alleged slipperiness in winter, and, while no formal vote was taken, the general conclusion seemed to be that the wisest method would be a roadbed known as a Telford-Macadam, combining most of the best features of both methods of these pioneers in road building.

The present Executive took an immediate and active interest in the matter, and when the budget for the year was under consideration recommended that a beginning be made by appropriating the amount above shown.

As the Metropolitan Water Board had notified us of their intention to lay a 48-inch main through the avenue from Harvard Square to Beech Street, nothing could be done between those points this year, and it was decided to begin work at the Arlington line and complete as much as possible under the appropriation made.

Everything possible has been done to prevent the street from being dug up for any purpose that could be foreseen. The several departments of the city and the corporations which have occasion to open the streets were early informed of our intention to rebuild the avenue and requested to make whatever changes they desired before we began the work; a notice was sent to all owners of estates abutting on the avenue that, except in extraordinary circumstances, no opening would be allowed there for two years, and at the request of the City Government, the tracks of the West End Railway Company were brought to grade and rebuilt, from the Arlington line to Porter's Station.

Work was begun on June 29 at Alewife Brook, and on October 16 the avenue was completed as far as Chester Street, a distance of 4,159 feet. This was considerably further than we had expected to be able to go, and was made possible by the exceedingly favorable contract which we made for the ballast or foundation stone and the facility with which we were able to handle the cracked stone, every pound of which came from the crusher at our Raymond Street Yard.

As the term "Telford-Macadam" may be to some an unmeaning one, the method of construction is here described: The roadbed was excavated to a depth of twenty inches below the finished grade; on this sub-grade was laid a ballast or foundation of ledge stone, set upright on the thickest end, to the depth of one foot; after the points had been broken off and rammed into the intersections, the ballast were firmly packed by steam rollers. On this foundation was laid three courses of cracked stone, consisting of three inches of coarse, six inches of medium and one of fine stone. Each course was thoroughly rolled by steam rollers and the surface finished with stone dust. The edgestones on both sides of the

street were reset, new stone laid where necessary and the gutters were put in order the entire length.

Over ten thousand tons of ballast stone and about eight thousand, five hundred tons of cracked stone were used in making the road bed, and its solidity may be appreciated when one understands that every square yard of this street consists of one ton of practically solid rock.

Nineteen thousand and forty square yards, or a little less than two-fifths of the avenue have been completed.

From Chester Street to Garden Street, a distance of about 7,200 feet, there remains 32,840 square yards, and including Porter Square and Somerville Avenue to the Somerville line, 1,522 square yards additional, which I hope we shall be able to complete next year.

A large amount of the material taken out of the excavation for the road bed was found to be serviceable and was used for surfacing streets in the vicinity of the avenue on which the traffic was not so severe. The material was found to possess excellent binding qualities under steam rolling and the following streets were thus repaired at very small cost: —

	Loads
Cameron Avenue	850
Clifton Street	377
Dudley Street	328
Harvey Street	532
Locke Street	47
Montgomery Street	1,251
Meacham Street	119
Mount Pleasant Street	145
Magnolia Avenue	583
Middlesex Street	221
Reed Street	113
Rindge Avenue	255
Vincent Street	206
Whittier Street	106
Total	5,133

Watering Streets.

Appropriation		$26,000 00
EXPENDED.		
Foremen	$739 00	
Sprinkling contracts	21,364 67	
Temporary clerical assistance, stationery and printing	164 50	
Labor, repairing and painting carts	1,360 25	
New tanks and attachments	710 30	
Lumber, etc.	201 72	
Hardware, springs, etc.	860 81	
Paints, oils, etc.	357 28	
Stand-pipe repairs	81 80	
Bicycle repairs	13 00	
		$25,853 33
Balance		$146 67

For the third year the streets have been watered under what may now be considered the settled plan for this work. The city is divided as nearly as possible into equal sections, to each of which is assigned a cart with instructions that the streets in that section must be kept properly watered at all times. Under this section system, contracts were made for forty-four carts at an average price of $73.25 per month. The service has, on the whole been generally satisfactory and complaints have been comparatively few.

The wisdom and economy of this plan has been clearly demonstrated, the cost, even during the past unusually rainy season, being less than under the old plan of employing teams by the hour.

Beyond the usual repairs to watering carts to be made during the winter months, our plant is in excellent condition and no new carts will be required during the coming year.

In General.

It was found during the latter part of the season that the mason work at the Hampshire Street Stable was in an unsafe condition, and authority was granted by the city government to expend the sum of $1,000.00 in pointing and repairs. The work has not been

entirely completed, but enough has been done to make it safe for some time. The amount so expended was $707.62.

The very complete system of granting permits to parties using or opening streets, established this year, under the advice and assistance of the City Solicitor, has made it possible for us to exercise complete control over the work in progress, and has, I believe, resulted in a more general observance of the ordinances in relation thereto.

Following is a schedule of property in charge of this department:—

Real Estate.

City yard and stable, Raymond Street:—		
Land	$11,000 00	
Stable, sheds, scales, etc.	33,000 00	
		$44,000 00
City Stable, Hampshire Street:—		
72,661 square feet of land, Assessors' valuation,	30,000 00	
Stables, sheds and scales, including old police station	17,000 00	
		47,000 00
Yard and pound, east side of Norfolk Street 39,600 square feet of land, Assessors' valuation	$12,000 00	
Mill Pond property, 70,684 square feet of land, Assessors' valuation	29,000 00	
		$41,000 00
Total real estate,		$132,000 00

Personal Property.

56 horses	$13,400 00	
48 watering carts	17,500 00	
43 carts (29 single, 14 double)	6,300 00	
58 set of harness	1,580 00	
23 sleds, 8 snow-plows, 1 sleigh	2,500 00	
2 snow levelers, 5 road plows	450 00	
1 buggy, 4 foremen's wagons	400 00	
3 tool wagons, 2 bicycles	400 00	
2 hayracks, 1 caravan, 2 pungs	425 00	
3 steam road rollers	10,875 00	
Amounts carried forward	$53,830 00	$132,000 00

Amounts brought forward	$53,830 00	$132,000 00
4 horse rollers	1,000 00	
4 road machines	1,000 00	
2 road scrapers	750 00	
5 street sweepers	1,490 00	
Stone-crushing plant, Raymond Street yard	7,000 00	
Stone-crushing plant, Hampshire Street yard	6,000 00	
Tools and stable furniture	4,500 00	
Lumber, iron, paints, oils, etc.	1,800 00	
1,529 feet of straight edgestone	626 89	
809 feet circle edgestone	485 40	
175 linear feet granite flagging	98 00	
9,200 paving blocks	366 85	
80,000 bricks	1,000 00	
		79,947 14
Total		$211,947 14

In closing this report, I wish to express to His Honor the Mayor my sincere appreciation of the valuable assistance rendered me during the past year, and to extend to him my thanks for his counsel and support.

To the members of the Joint and Standing Committees on Roads and Bridges, all of whom have been ever ready to assist and advise in all matters pertaining to the department, I am indebted for their encouragement and approval, and the constant interest they have taken in the department. My acknowledgments are due to the heads of the various departments for their courtesy and consideration and their ready co-operation in matters in which we were mutually concerned. I am not unmindful of the value of the work of the subordinate officials of the department, and I take this opportunity to commend their fidelity and efficiency.

Respectfully submitted,

C. A. BROWN,

Superintendent of Streets.

REPORT OF THE BOARD OF CEMETERY COMMISSIONERS

CAMBRIDGE, December 1, 1897.

To the Honorable the City Council: —

The Board of Commissioners of the Cambridge Cemetery respectfully submits its forty-fourth annual report, the same being for the year ending November 30, 1897.

The amount appropriated at the beginning of the year was	$20,500 00
The total amount of expenditures was	19,846 77
Balance of appropriation unexpended	$653 23

For a detailed account of expenses, reference is made to the City Auditor's Report.

The receipts of the year have been as follows: —

Burial and tomb fees	$4,990 00
Care of lots	2,990 02
Sale of lots and graves	8,678 63
Foundations, brick graves, etc.	1,425 55
Interest on Cemetery Fund	1,381 27
Sundries	178 58
Total	$19,644 05
The estimated revenue was	18,500 00
Excess of revenue over estimate	$1,144 05

An examination of the foregoing figures reveals a financial condition which is more promising than for many years.

The amount received from sales of lots is the largest in the history of the Cemetery and is especially pregnant with hope of

more prosperous general conditions by reason of the increasing number of lots sold, and the lessening ratio of single graves.

In our reports for the past three years, we felt constrained to acknowledge the effect upon the business of this department of the widespread financial depression, as evidenced in the great number of single graves sold, instead of lots.

Guided by the same principle, which we feel is a sound one, the results of the season of 1897 are gratifying, and when the marked increase in sales of lots during the past season over the season of 1892 is considered, this reasoning will be more apparent.

An increase of business over the season of 1896 was anticipated, but hardly to the extent that has materialized.

The ordinary expenses of the year have slightly increased. This increase is directly traceable to two principal causes: the natural additional cost on account of the growing use of the Cemetery, and the unusual amount of money expended in caring for the grass.

Grass cutting was carried on for a period of six months, something never experienced before, and this required the expenditure of a considerable sum for labor, which could not well be foreseen or estimated.

Most of the avenues and paths are in good condition; a few however must be re-surfaced, two almost rebuilt.

Willow and Fir Avenues require so much attention and labor to make them passable that they should be rebuilt early in the coming year. In stormy weather, the passage of funeral processions through these avenues is attended with much inconvenience and discomfort, and, being main avenues, their good condition is at all times desirable. For several seasons this state of affairs has been evident, yet the more pressing needs of other matters have compelled attention, and the work of reconstruction has been deferred.

It does not appear wise to forego the work on these avenues much longer, for accidents may occur which would be fraught with unpleasant consequences, besides which, these thoroughfares and their condition are especially noticeable to strangers who may visit the Cemetery, and lead to the formation of unfavorable impressions of the care exercised by the City.

The extension of River Avenue is now carried well into the southerly extremity of the Cemetery.

In connection with this extension it has been necessary to build a retaining wall of earth and stone, and the filling has almost kept pace with the surfacing of the roadway, which is entirely constructed to a point near the former location of the Winchester Mansion.

A large amount of filling is necessary to finish the work on this avenue, but as all this work will not be done during the next season the cost will be included in the amount requested for roadways.

The use of River Avenue has become almost universal by funeral processions, because it provides a convenient and easy approach to almost all parts of the southerly half of the Cemetery, and so we feel compelled to continue the rail fence along the marsh from the present southerly terminus on River Avenue to a point about opposite Halcyon Avenue, a distance of six hundred and seventy-five feet. This fence, which is a necessary adjunct to the roadway, is not of ornamental construction, but is intended for practical purposes.

It is to be built of cedar posts and cypress planking, and will cost, it is estimated, $250.00.

A new fence should be built on the line between the Cemetery and the Coolidge property. The old fence is rotting away and can be easily overturned in places.

This should be rebuilt and in addition a guard rail should be constructed on Meadow Avenue from the Old Receiving Tomb to the Soldiers' Lot on Prospect Avenue, a distance of eight hundred and sixteen (816) feet. The cost of this fence and improvement would be about $350.00.

The Superintendent's report presents statistics of the work of the year from which the following facts are taken: —

Number of lots prepared	60
Estimated value of the same	$4,920 00
Number of lots ready for sale	196
Estimated value of the same	$50,613 11
Number of single graves ready for sale	118
Estimated value of the same	$2,360 00

Number of interments	673
Number of removals to other cemeteries	17
Number of interments in cemetery (total)	21,659
Number of burials (Overseers of Poor)	48
Number of monuments erected	11
Number of headstones erected	118
Number of lots sold	44
Number of graves sold	23
Average number of men employed	19

Coolidge Avenue.

The condition of the roadway in Coolidge Avenue, approaching the Cemetery, has been the subject of much unfavorable comment, it seems to this Board with strict justice. Early last season, attention was directed to the rough and uneven surface of this roadway which rendered driving at times unsafe, and at all times uncomfortable.

An attempt has been made to remedy this difficulty by the spreading of a small amount of cracked stone in the hollows of the road, but it would seem that more radical measures should be employed.

While not attempting to dictate as to the manner of doing the work, it appears to this Board, that no permanent, satisfactory result can be obtained until the crown of the hill is lowered and the steep grade correspondingly reduced.

The clayey nature of the soil with the present steep grade renders ordinary patching abortive and fruitless, and more enduring methods ought to be employed.

This suggestion is respectfully urged to your notice, with the full belief on our part, that an improvement of this roadway is needful and that immediate steps should be taken to remedy the cause of so much complaint.

Greenwood Avenue Section.

This portion of the grounds remains in much the same condition as at the time of the last report. It was the intention of this Board to complete the work begun in 1896, by grading the entire

section and placing it in condition for immediate use, and as this result could be accomplished only by considerable extra expense, the City Council was requested to provide an extra appropriation for the purpose in the sum of two thousand dollars ($2,000.00).

With the opening of the season, in the spring of 1897, the more pressing demand for a proper vault for the custody of the records of the Cemetery, to which reference is made in another portion of the report, necessitated a change in the plans of the Board and, although the appropriation requested was desired and intended for use in this Greenwood Avenue section, the cost of the record room precluded the possibility of attempting any portion of the work on this section. During the year, only such attention was given as was necessary to keep the Avenues clear of weeds and growth.

It is a pleasure to be able to record the satisfactory construction of the roadway in this section; for, despite the inconsiderable care given to it, the storms of the past winter and spring have in no manner affected its condition, although the steep grades and water shed might well have been expected to cause the cutting up of the surface.

This year the Board again would request an appropriation for the laying out of this section in agreement with the plans already formulated.

The whole section must be graded, the soil separated and replaced in proper locations, paths designated by appropriate signs, and lots and graves plainly marked.

It is believed that the grading can be done without the purchase of new material for filling by using such supply as may be on hand, and this will of course lessen the total cost.

To complete the work of construction with accompanying incidentals, it would seem that an appropriation of two thousand dollars ($2,000.00) should be forthcoming.

We can reiterate the statement of our last report when we said: "But a small part of the grounds remain uncompleted, yet this portion, though rather small in area, is likely to prove an expense disproportionate to its extent."

This is indeed true, if an attempt is to be made to utilize for burial places the hollow at the extreme southerly limit of the Cemetery.

While no estimate has been obtained as yet of the amount of filling necessary, still it will obviously require a very large amount, and as a preliminary part of the work this Board could easily make use of the sum of $1,000.00.

Record Vault.

Realizing that the Cemetery was now in possession of many valuable records and documents, the loss of which would work great hardship on individuals and the city, and especially on this department, for many years we have declared the need of a storage vault for records and important instruments.

After careful consideration it was decided to build an addition to the office building and provide therein a suitable safe.

The services of Architect George Fogerty were secured, and his suggestion of the erection of a wing to the rear of the office building, similar in outline and architectural effect to the front porch, was adopted. Bids were secured for the construction by public advertisement, and the contract was awarded to the lowest bidder, Mr. William Crane of this city, who has performed the stipulation of his contract in an entirely satisfactory manner.

The cost of the work under the contract was $1,343.00, and there was no additional cost for extra work.

On the completion of the vault, deeming it advisable to renovate the interior of the office building, alterations were made which materially changes the appearance of the interior. By using a spiral iron staircase, access to the upper story of the building is now rendered convenient and the space may be used for purposes of drafting and storage.

By disposing of one of the old safes and the removal of the other to the Superintendent's office, much needed space has been added to the Clerk's office, while the public office has been improved until it is fairly suitable for chapel purposes.

The cost of these alterations, exclusive of the cost of the erection of the record vault, which has been before stated, was $520.41, so that the entire cost of erection and renovation was $1,863.41.

Of the vault itself, a few words might now be said. It is built of granite and bluestone, exactly conforming to the style of the building, of fire-proof construction, with suitable ventilation areas, and is well adapted to its purpose. The shelving is of ground glass, and the interior is painted a light color and varnished. The door is of iron with protecting inner doors, and fitted with combination locks.

It might not be amiss to state that the decision of the Board to erect this vault was strengthened by the passage of the law of 1897, requiring proper places for the safe keeping of public records, and perhaps the decision was hastened, as it was evidently only a question of a brief period of time before the requirement for such a vault must be met.

Perpetual Care.

The number of lots placed in perpetual care has been greater than usual, twenty-one (21) lot owners having complied with the conditions of the trust, and adopted this means of ensuring the continuous care of their lots.

The whole number of lots in this class is now 292, and the fund now aggregates the sum of $40,184.58, thus providing sufficient income to properly execute the work of the trust.

The Soldiers' and Sailors' Lots

are now completed and will in future require only ordinary care.

There have been five interments during the year, one of which was in the old lot on Prospect Avenue, from which one removal was made to a private lot.

The shrubbery, which has been placed in the space contiguous to the lot near the entrance, has grown rapidly and in arrangement and effect presents an appearance which appeals to the eye of every

beholder. The cost of the maintenance of these two lots has been $204.50 of which $116.00 was for the care of the lot near the entrance.

Card Catalogue and Index.

It has been felt that the use of the Card Index System would be advantageous in the execution of the record portion of Cemetery work. For two or three years, an appropriation for the introduction of this system was requested and an agreement was made for a cabinet and catalogue during the past summer. Through unexpected delays, the contract was not completed in season to be paid from the appropriation of last year and this fact accounts in part for the unexpended balance of $1,157 which is noted in the beginning of this report.

Had the terms of the contract been executed, the foregoing balance would have been somewhat reduced, as the system, with certain necessary incidentals, will require the expenditure of about $300, which is requested to be included in the coming appropriations.

Summary.

The Board would respectfully request favorable consideration of the following items of necessary, special appropriation : —

1. The completion of the work of laying out the unused portion of the Cemetery in the Greenwood Avenue Section, with the necessary incidental matters of grading and filling, at an expense of about $2,000.

2. The construction and rebuilding of several roadways, which will probably cost about $500.

3. The repairing of the fence on the line of the Mount Auburn and Coolidge properties, and the construction of a guard rail, with the extension of the existing fence on the southerly part of River Avenue, at an expense of $600.

4. The procuring of a card index for the convenient classification of burials, at an expense of $250.

5. The survey of the Old Burial Ground in Ward 1, so that the lines of the territory may be properly defined. This will render necessary a complete examination of the title to this land and the determination of the rights of several owners of property in the vicinity. The expense will probably be about $300.

6. For the preliminary work of filling and grading the hollow at the extreme southerly end of the Cemetery, as suggested on page 270 of this report, the sum of $1,000.

GEORGE S. SAUNDERS,
NATHAN C. LOMBARD,
JOHN H. H. McNAMEE,
HERBERT A. CHASE,
CHARLES O. WELCH,
WILLIAM A. BERTSCH,

Board of Commissioners of Cambridge Cemetery.

REPORT OF THE CITY ENGINEER

OFFICE OF THE CITY ENGINEER,
CAMBRIDGE, December 1, 1897.

To the Honorable the City Council :—

The thirty-first annual report of the City Engineer is herewith submitted, showing the operation and expenditures of the departments of Engineering and Sewers for the year ending December 1, 1897.

Office.

Fourteen assistants have been employed in this department the past year at various times, beside the clerk. In addition five assistants have been employed on work for the Park Department, and thirty-two assistants on work for the Water Department.

The yearly summary of work done is as follows :—

For Street Department.

Number of street lines given	208
Number of street grades given	111
Number of surveys	5
Number of streets on which paving, curb, etc., was measured	142
Number of assessments prepared	664
Number of plans or profiles prepared	44

For Sewer Department.

Number of lines given	57
Number of grades given	86
Number of sewers measured	52
Number of plans or profiles prepared	42
Number of sewers assessed	57
Number of sewer assessments prepared	495
Number of surveys	2

Table showing Rainfall at Roberts Dam at Weston, Hobbs Brook in Waltham, the Fresh Pond Pumping Station (Cambridge Water Works), and at the Harvard Observatory, Cambridge, December 1, 1896, to December 1, 1897.

Day of Month.	1896. DECEMBER.				1897. JANUARY.				FEBRUARY.				MARCH.				APRIL.				MAY.				JUNE.				JULY.				AUGUST.				SEPTEMBER.				OCTOBER.				NOVEMBER.				Day of Month.
	Roberts Dam.	Hobbs Brook.	Fresh Pond.	Harvard Obs.	R. D.	H. B.	F. P.	H. O.	R. D.	H. B.	F. P.	H. O.	R. D.	H. B.	F. P.	H. O.	R. D.	H. B.	F. P.	H. O.	R. D.	H. B.	F. P.	H. O.	R. D.	H. B.	F. P.	H. O.	R. D.	H. B.	F. P.	H. O.	R. D.	H. B.	F. P.	H. O.	R. D.	H. B.	F. P.	H. O.	R. D.	H. B.	F. P.	H. O.	R. D.	H. B.	F. P.	H. O.	
1														.03	.07								.12			T			.03	.03	.05				.02			.42	.36			T				1.52	1.46		1
2													.15	.12	.10	.08						.78	.88	.52						.19	.43			T	.11			.10	.40	.56					1.38	.79	.76	1.66	2
3													.13	.14	.05	.10					.76	.43	.35	.38		.14	.03					.35					.68			.01				.90	T		.46	3
4		.01				1.27	.58	T					.12			.03			.18		.45			.34		.28	1.15	.02						1.49	1.46												4
5				.01	.86	.26	.32	1.02						.33	.28		.20	.20	.04	.18					1.34	T	.02	1.60					1.41	T	.05	1.52									.08	.07		5
6					.75			.08			.51		.35			.25	.05	.01														.21											.06			.05	6
7									.55	.61		.51						.33	.50																.03											7
8		.89	.75						.10	T	.04	.01					.36	.52	.55	.53						.08	.06									.02								.25	.17		8
9	.95	.19	.28	.89								.01		.02	.04		.52	.73	1.09	.58						1.75	1.95	.10						.05										.21	.53	.65	.21	9
10				.08									.04	.02	.03	.04	.83			.95		.62	.73		1.85	.21	.19	2.23						.23										.62			.54	10
11																					.84		.13	.72	.17			.19																		11
12			.02		T	T		T		1.40	.97	.02		.28	.13						.09	.46	.25	.21		T				.31	.26			.13				.22			.11		.20	.36		1.23	1.23	.53	1.95	12
13									.97			1.06	.29			.19					.26	.40	.19	.13		.37	.26		.39	.37	.14	.30						.53	.34		.34			.30	.42				13
14													.39	.32	.38			.12			.54	T	.01	.16	.66	.01	.01	.26	.33	T	.06	.27					.24			.31								14
15			.03							.08	T					.44	.13	.12	.20	.14		T	.05			.01	.02							.26	.38									.03	.02		15
16			.30	.16						T		.04					.20			.11		T		.04	.06						.62	.09	.06	.32		.18	.33						.22	.30	.01	16
17	.39	.65		.20		.24	.23											.20	.18										T			.03			.06	.22		T	.24				.32			.31	17
18	T	.03			.33	T		.25						T			.30			.16												.13	.99												18
19														.52	.40	T											.31					.30			1.03								.08	.14		19
20						.42	.51			.09	.12		.65	.26	.31	.54									.33	.38	.12	.36			.18							.96	.93	T				.16	.02	.09	.19	20
21					.55	.16	.17	.79	.15			.14	.36	T		.23						.12	.15							T	.01						.71			1.05		T	.10	.05	.06			.03	21
22			.05		.32	.05	.08			.66	.70			T							.22			.13						.82	.87	.31		.51	.76					.05		.03		.26	.30		22
23	.24	.20	.20	.17	.09	T		.07	.64	.02	.02	.74		.01	.56														1.10	T		.60	.57		.03	.54			.57				.30			.33	23
24				.06									.41	1.17	.31	.72						T	.87	T						.32	.73			1.03	1.05	.06	.59	.65	.03	.65							24
25													.61	T		.30			.03		.78	.70	.01	.85		.01	.05	.17	1.15	.06	.04	.70	1.21			.92	.05							.04	.04		25
26																	T	.04				T									.03						.10						.34	.46	.03	26
27						1.06	.48											.17	.05		.07	.13	.07							T							.11		.07				.36	T	.02	.45	27
28					.52	.80	.95	.95									.13	T		.05		T	.01	.08						1.39	1.64											.03	T				28
29					.96			.85										T				.14	.01			.02	.88		1.47	.10	.15	1.50											.15	.12			29
30																						.41	.38		1.07	.91	.11	1.05	.14														.20			.11	30
31																					.49	T	.03	.22					.09	.54	.08	T															31
	1.58	1.97	1.63	1.57	4.38	4.26	3.32	4.01	2.41	2.86	2.36	2.53	3.50	3.22	2.66	2.92	2.72	2.41	2.82	2.70	4.50	4.19	4.24	3.78	5.48	4.17	5.16	5.98	4.70	4.13	4.68	4.06	4.76	3.89	5.06	4.47	2.41	3.13	3.22	3.00	.39	.21	.55	.40	6.22	4.54	6.83	6.45	

For Water Works.

(*Not including work done at Hobbs Brook Basin.*)

Number of lines given	3
Number of grades given	13
Number of surveys given	10
Number of plans or profiles made	18

For Park Department.

Number of surveys made	8
Number of grades given	300
Number of plans or profiles made	21
Number of stone bounds set	12

For Private Parties.

Number of street lines given	80
Number of street grades given	74

Miscellaneous Work.

Number of houses measured	745
Number of plans or profiles prepared	2
Number of plans for assessors	138
Number of surveys or levels made	121
Number of grades given	8
Number of surveys at Cemetery	7
Number of stone bounds set	20

There are now on file in the office 4,621 plans.

Assessors' Block Plans.

Work on the plans which was begun in 1895 is now practically finished. By this plan the city is divided into 269 sections or blocks which are shown on separate sheets or plans, drawn on a scale of 40 feet to an inch, and showing all lots with dimensions and areas of each lot as obtained by deeds, plans, or surveys, together with all buildings thereon.

The plans are drawn on sheets of paper mounted on cloth and are $21\frac{3}{4}$ inches by $30\frac{1}{2}$ inches, making sheets of convenient size for reference. To be of the best service to the city, all subdivisions of lots, by deed, or otherwise, together with all new buildings built should

beaddedfrom year to year. These sheets cannot help but prove of great service to the Assessors and the city, as use is made of them. The total amount expended for these plans is $4,804.08.

Financial.

Appropriation, Engineering	$11,500 00	
Expended	10,974 97	
Balance unexpended		$525 03
Assessors' plans	$2,000 00	
Expended	1,994 32	
Balance unexpended		$5 68

In addition to the above there has been expended and charged directly to the following Departments, for Engineering expenses: —

Water Works: —		
Payson Park Reservoir	$65 87	
Hobbs Brook Basin	11,636 58	
Park Department	3,813 03	
Making a total expenditure for Engineering of		$27,484 77

Streets.

Prison Point Street Railroad Crossing.

A most important matter affecting the business interests of Cambridge was brought up by the petition of the Boston & Lowell Railroad Corporation to the Supreme Court on March 21, 1896, "for such alteration of the grade crossing of Prison Point Street with the said railroad in Cambridge, so as to avoid a crossing at grade."

Upon this petition the court appointed three gentlemen as special commissioners, Hon. Henry S. Milton, Edward S. Bishop and Henry G. Taft, to determine what should be done in the matter. The first hearing was had August 12, 1896, and in all thirty hearings were given, the last being on September 8, 1897.

The plan proposed by the railroad for separating the grades provided that Prison Point Street be elevated its entire length from

Bridge Street to the City line some 23 feet, connecting with Bridge Street by two inclines extending each way from Prison Point Street some 850 feet. The railroad was to remain on its present grade and have the free use of the present location of Prison Point Street, which was to be discontinued and practically granted to the railroad.

To this plan the City of Cambridge strenuously objected. Many of the hearings were numerously attended by citizens who remonstrated against the carrying out of a scheme so manifestly unjust and calculated to interfere so seriously with the highway travelling public.

After repeated attempts to secure the adoption of a different plan, a plan was finally agreed upon as a compromise by which the grade of Bridge Street at its junction with Prison Point Street is to be raised about five feet above its present grade. The grade of Prison Point Street starts from this new grade and rises so as to reach an elevation sufficient to pass over the track of the railroad.

From this point the grade runs level to the city line at Miller's River. The grades of Bridge Street and Commercial Avenue incline from the elevated part at the junction of Bridge and Prison Point Streets to meet the present grade of each street.

While this is not the plan that was desired, it seemed to be the best that could be obtained, and is preferable to that proposed by the railroad company. The final decree of the commsssioners has not yet been made.

Magee Street Widening.

On June 12, 1897 an order was adopted widening and laying out Magee Street to a width of forty feet. This was done "under the provisions of law authorizing the assessment of betterments," and any betterments should be assessed within two years from the above date.

The streets laid out and accepted during the year are shown in detail in the following table: —

Streets Laid out between December 1, 1896 and December 1, 1897.

STREET.						PLAN.	
Name.	From	To	Length in Feet.	Width in Feet.	Accepted.	Made by	Date.
Buena Vista Park.....	Huron Avenue....	Northerly.....	347	40	Dec. 4, 1896.	W. A. Mason & Son.	May 25, 1896
Binney Street.....	First Street.....	Commercial Ave...	235.25	50	Sept. 10, 1897.	City Engineer.....	May 14, 1897
Dudley Street.....	Massachusetts Ave.	Cedar Street.....	440.7	40	May 5, 1897.	City Engineer.....	April 8, 1897
Foster Street.....	Sparks Street... ..	Lowell Street.....	779.0	40	Dec. 4, 1896.	E. F. Bowker	Feb. 1, 1888
Magnolia Avenue.....	Baldwin Street....	Line Street.....	668.4	40	Dec. 4, 1896.	W. A. Mason & Son.	Aug. 19, 1896
Magee Street.....	Putnam Avenue...	Easterly	339.4	40	June 12, 1897.	City Engineer.....	June 30, 1896
Nutting Place.....	Mt. Auburn Street.	Southerly.....	260.0	30	Dec. 30, 1896.	W. A. Mason & Son.	June 8, 1896
Raymond Street.....	Walden Street.....	Crescent Avenue..	850.0	40	Dec. 4, 1896.	City Engineer.....	July 15, 1896
Seventh Street.....	Gore Street.....	Cambridge Street..	258.6	30	Oct. 6, 1897.	City Engineer.	June 11, 1897
Willow Street	Cambridge Street..	York Street.....	959.0	40	Dec. 17, 1896.	City Engineer.....	Dec. 8, 1896
York Street.....	Willow Street.....	Berkshire Street...	515	40	Dec. 17, 1896.	City Engineer.....	Dec. 8, 1896

Bridges.

An examination of the wooden bridges maintained by the city shows that nothing more than the usual repairs will be likely to be required the coming year.

The iron bridges referred to in the last Annual Report have been painted.

An examination of the under side of these bridges shows, however, that the metal is in places very much eaten away, and a very thorough and careful method of protection should be adopted or these bridges will soon be rendered unsafe for use.

Sewers.

8,584.0 feet or 1.626 miles of new sewers have been built the past year, making the total mileage in the city 103.321 miles. The total cost to date of this construction has been $1,284,241.80.

All the sewers have been built by day labor in charge of the Superintendent of Sewers under the general direction of the City Engineer.

Sewers Constructed between Dec. 1, 1896, and Dec. 1, 1897.

Location.			Construction.							Total Cost.
Street.	From	To	Material.	Size in Inches.	Av. depth of Cut.	Man-holes.	Lamp-holes.	Inlets.	Length in Ft.	
Bacon Court	Gore St	Northerly	Akron pipe	12	4.7	....	....	12	196.6	$178 55
*Charles	First St	Easterly	Akron pipe	12	11.1	....	....	8	128.2	312 87
Chilton	Concord Ave	Southwesterly	Akron pipe	12 and 10	8.1	....	....	16	248.0	200 90
Columbus Ave	Massachusetts Ave.	Madison Ave	Brick	26⅝ x 34½	10.6	1	....	9	175.1	†
Crescent	End of old sewer	Oxford St	Akron pipe	10	9.2	....	...	4	123.0	‡
Dana	End of old sewer	Southerly near Harvard St	Akron pipe	10	7.9	....	1	5	31.0	34 33
Dudley	Massachusetts Ave.	Cedar St	Portland pipe	12 and 10	9.0	1	1	25	379.0	487 72
Fayette Park	Fayette St	Westerly	Akron pipe	10	5.6	....	1	3	126.0	67 85
Fayette	End of old sewer	Broadway	Akron pipe	15	6 2	1	....	4	175.6	261 33
Fifth (unfinished)	Binney St	Southerly	Portland pipe	24 and 18	11.1	1	....	34	447.5	1,687 08
Gladstone	Bismarck St	Massachusetts Ave.	Akron pipe	8	6.3	....	1	8	180.6	114 17
Gorham	Wendell St	Southerly	Akron pipe	10	9.2	....	1	13	218.9	157 72
Grove Avenue	Allston St	Putnam Avenue	Akron pipe	10	9.7	....	1	18	259.0	242 77
*Holworthy	End of old sewer	Northerly	Akron pipe	15	2.9	....	....	8	97.9	255 41
Huron Ave	Appleton St	Royal Ave	Akron pipe	15	9.3	1	....	20	312.0	458 83
Inman Place	Derby Lane	Easterly	Akron pipe	8	7.0	....	2	20	260.5	§
Amt. car. forward.						5	8	207	3,358.9	$4,459 53

* Pile foundation.
‡ Included in cost of Oxford St. sewer reconstruction.
† Included in cost of Massachusetts Ave. sewer.
§ Included in cost of West St. sewer.

Sewers Constructed between Dec. 1, 1896, and Dec. 1, 1897 — Continued.

Location.			Construction.							Total Cost.
Street.	From	To	Material.	Size in Inches.	Av. depth of Cut.	Man-holes.	Lamp-holes.	Inlets.	Length in Ft.	
Amt. bgt. forward.	.....	.....	.....	.....	.....	5	8	207	3,358.9	$4,459 53
Lexington Ave.....	Massachusetts Ave.	Whittemore St.....	Brick and Portland pipe.....	26⅝ x 34½ and 24	9.3	2	....	48	720.3	*
Lincoln	End of old sewer..	Easterly near Columbia St.....	Akron pipe.....	8	7.2	....	1	4	51.6	28 82
Lincoln	Near Union St.....	Westerly	Akron pipe.....	8	6.2	1	....	3	49.7	54 29
Madison Ave.....	Columbus Ave.....	Whittemore St.....	Portland pipe..	18 and 15	7.2	2	....	53	661.6	*
Magazine	End of old sewer..	Northerly near Chestnut St	Akron pipe.....	10	7.9	....	....	4	49.1	42 41
Main St. and Kendall Sq.....	Broadway & Third St.....	Southerly and Easterly	Portland pipe..	12 and 10	8.8	1	1	10	339.8	467 40
Massachusetts Ave.	Near Alewife Brook	Lexington Ave.....	Brick	32x41¼ & 26⅝x34½	12.7	3	....	6	315.2	8,138 28
Museum	End of old sewer..	Northeasterly near Somerville line..	Akron pipe.....	10	6.2	....	....	2	37.6	20 02
Neill Court.....	Jackson St.....	Clifton St.....	Akron pipe.....	8	5.9	....	1	10	187.6	110 19
Newman.....	Near Bismarck St.	Massachusetts Ave.	Akron pipe.....	8	7.5	....	1	15	189.6	181 48
Phillips Place.....	Garden St.....	Berkeley St.....	Akron pipe.....	10	10.2	....	1	9	183.9	204 89
Porter Road.....	Massachusetts Ave.	S. W'ly and N. E'ly	Akron pipe.....	10 and 8	7.9	1	2	28	523.4	517 47
Rindge Field.....	Van Norden St.....	Northerly.....	Akron pipe. ...	10	7.4	1	1	16	485.6	468 05
Amt. car. forward.	.....	.....	.....	.....	.....	16	16	415	7,153.9	$14,692 83

* Included in cost of Massachusetts Ave. sewer.

Sewers Constructed between Dec. 1, 1896, and Dec. 1, 1897 — Concluded.

Location.			Construction.							Total Cost.
Street.	From	To	Material.	Size in Inches.	Av. depth of Cut.	Man-holes.	Lamp-holes.	Inlets.	Length in Ft.	
Amt. bgt. forward.	....	.....	.. ..	.....	.....	16	16	415	7,153.9	$14,692 83
Vernon....,.....	Green St.....	Massachusetts Ave.	Akron pipe.....	10	9.9	....	1	8	153.4	156 67
Washington.....	Cherry St.....	Pine St.....	Akron pipe.....	10	5.3	....	1	12	159.9	95 67
West Place.....	Broadway.....	Inman Place.....	Akron pipe.....	10	6.5	1	....	9	157.4	*
West.....	Inman St.....	Lee St.....	Akron pipe.....	10 and 8	7.8	2	1	38	495.6	912 68
Windsor.....	Massachusetts Ave.	Northerly.....	Portland pipe..	12 and 10	8.4	1	1	14	268.8	852 02
Winslow.....	Orrin St.....	Southeasterly.....	Akron pipe.....	10	7.5	....	1	14	195.0	204 84
						20	21	510	8,584.0	$16,914 71

Construction of sundry sewers	$16,914 71
Sewers reconstructed, but charged to construction account	6,093 48
Metropolitan connections charged to construction account	6,278 01
Catch basins built and miscellaneous work, construction account . . .	2,651 51
	$31,937 71

* Included in cost of West St. sewer.

HELIOTYPE PTG. CO. BOSTON

SEA-WALL ON CHARLES RIVER.

LOOKING EAST TOWARD MAIN ST.

Sewers Reconstructed between Dec. 1, 1896, and Dec. 1, 1897.

Location.			Construction.							Total Cost.
Street.	From	To	Material.	Size in Inches.	Av. depth of Cut.	Man-holes.	Lamp-holes.	Inlets.	Length in Ft.	
Green.....	Bay St.	Westerly.....	Portland pipe..	15	8.5	....	....	7	92.8	$199 93
Langdon.....	Massachusetts Ave.	Westerly.....	Portland pipe..	15 and 12	7.2	2	....	30	525.7	702 75
Oxford and Harris.	Sacramento St.....	Frost St.....	Brick and Portland pipe.....	30½ x 39⅛ 26⅝ x 34½ and 18	9.7	4	....	20	1,101.6	5,390 73
						6	....	57	1,720.1	*$6,293 41

* $6,093.48 of this amount has been charged to the account of Sewers, construction.

Catch Basins.

Sixteen catch basins have been built at a cost of $1,053.68. Eight thousand two hundred and ninety-three loads have been removed from 2,694 catch basins at a cost of $6,393.50. This has all been done by day labor. Eighty-eight catch basins have been repaired.

Metropolitan Sewer Connections.

The last connection with the Metropolitan Sewer at present required was made in the early summer at the Talbot Street sewer.

Great difficulty was experienced at this point in getting the work down to the required grade, some 22 feet below the surface. The material was a fine sand and at eight feet depth water was encountered. The heavy brick factory of E. Reardon & Son stood on the adjacent corner. These conditions made the work a difficult and expensive one. It was successfully accomplished, however.

The City of Somerville in the early part of the season made its connection at Somerville Avenue, so that the connection at Binney Street could be put in service and the discharge of sewage, except in time of storm, at the Bridge Street sewer outlet stopped. The Metropolitan Sewer is now taking all the sewage of the city. The care and examination of the regulators and tide gates at the 17 various connections requires a good deal of time and involves a considerable expense, as a very careful watch has to be kept that all the apparatus is maintained constantly in good working order. $6,278.04 was expended in completing the connections with the Metropolitan Sewer which amount was all charged to "Sewers' Construction."

Imperfect Sewerage.

The trouble and complaint from imperfect sewerage, back water and flooded cellars has been more general this year than ever before.

A number of unusually severe rain storms during the summer showed conclusively that the sewers in some localities were inadequate to remove the storm water. By a vote of the City Council dated August 6, 1897, the committee on sewers was requested to investigate the matter, and at its request the City Engineer pre-

HELIOTYPE PTG. CO. BOSTON

HOBBS BROOK BASIN.

PULLING STUMPS AND STRIPPING BOTTOM OF BASIN.

pared a report dated October 15, 1897, as to the condition of the sewers of the city, and suggesting several plans by which the troubles found could be remedied.

Owing to the importance and magnitude of the question, no definite recommendation was made, but further time asked for in which to more carefully prepare estimates and plans in detail. This is expected to be done this winter.

Clay Land Sewers.

The work begun last year constructing sewers in the new streets laid out by agreement with the Bay State Brick Company was continued this season until all the sewers which could be safely laid were put in. Quite a number of the streets required a heavy fill to bring them to grade and it was deemed best to wait until this filling was thoroughly settled before the sewers were built. This filling has now been done by the Street Department and the sewers can be built with safety the coming year.

The total length of sewers required will be about 10,018.8 feet of which 7,200.8 feet have already been built at a cost of $14,725.00.

Brtdge Street Outlet.

The bulk of the sewage formerly discharged at this point now being taken by the Metropolitan Sewer, a thorough cleaning and removal of the mud collected on the flats about the sewer outlet was made. It is expected that the conditions will be so much better under the present system that little or no further dredging will be required here. Under a contract dated May 5, 1897, the Eastern Dredging Company dredged and removed 5,150 cubic yards of material, the total cost of which, including flushing, etc., was $3,595.93. Five-ninths of this amount or $1,997.73 was paid by the City of Somerville.

Financial.

Construction, General.

Appropriation	$32,300 00	
Expended	31,937 11	
Balance unexpended		$362 89
Receipts from assessments	$13,857 24	
Receipts from sundry sources	154 95	
	$14,012 19	

Construction, "Clay Lands."

Appropriation	$8,131 32	
Expended	7,856 32	
Balance unexpended		275 00

Maintenance.

Appropriation	$24,200 00	
Expended	23,283 06	
Balance unexpended		916 94
Receipts		2,166 14

Tannery Brook.

Appropriation	$1,500 00	
Expended	1,154 36	
Balance unexpended		345 64
Receipts		2,684 60

Water Works.

Water has wasted over Roberts Dam 256 days during the year, and was below the crest of the dam 109 days. The highest water, reached March 25, 1897, at 6 P. M., was 1.00 foot above the crest. Elevation 82.00. Eighty three million three hundred thousand gallons passed the dam that day. On November 1, 1897, the lowest water was reached, 9.98 feet below the crest, elevation 71.02.

HELIOTYPE PTG. CO BOSTON

GATE-HOUSE AT PAYSON PARK RESERVOIR.

Water wasted over the dam 256 days as follows: —

December,	1896	205,847,200 gallons
January,	1897	343,070,000 "
February,	"	275,129,700 "
March,	"	1,262,710,000 "
April,	"	784,570,000 "
May,	"	381,934,700 "
June,	"	320,325,100 "
July,	"	95,688,900 "
August,	"	325,252,800 "
September,	"	421,600 "
October,	"	——— "
November,	"	21,687,200 "

Total amount passing the dam during the year 4,016,637,200 gallons.

At Fresh pond the hightest water was on June 11, 1897, at elevation 17.34. The lowest water, December 1, 1896, at elevation 11.41.

Hobbs Brook Basin.

The flow of water over the weir at Winter Street Dam for the past year is an follows:—

December,	1896	123,670,000 gallons
January,	1897	110,940,000 "
February,	"	75,630,000 "
March,	"	350,240,000 "
April,	"	233,950,000 "
May,	"	131,390,000 "
June,	"	132,780,000 "
July,	"	133,950,000 "
August,	"	232,790,000 "
September,	"	36,830,000 "
October,	"	15,220,000 "
November,	"	70,630,000 "
Total amount		1,648,020,000 gallons

The total rainfall was 39.01 inches.

The work at the basin is now practically done. The basin above Lincoln Street was completed in 1896 and the gates shut January 7, 1897, since which, water has continuously been stored there. The stripping of Section "C," has been completed by Mr. Auguste Saucier at a cost of $45,631.37.

The six remaining sections called "E" to "J" inclusive, are now practically finished by T. W. Kinser & Sons, contractors.

In all the sections between the Lincoln Street and Winter Street Dams a large amount of stone riprap work has been done on the exposed shores; in all some 40.700 lineal feet of shore has been so protected.

The stones for this work were obtained from the bottom of the basin where enormous numbers were uncovered in stripping. These were broken and split with dynamite, 9.65 tons of which were used for this purpose.

A substantial granite house has been built over the gate chamber at the Winter Street Dam under a contract with Mr. M. N. Stearns. Contract price, $6,574.

County Road.

On September 23, 1895, the County Commissioners of Middlesex ordered the road making the westerly boundary of the land taken by the City of Cambridge and called the "County Road," which was very crooked and of irregular width, be located anew, made a uniform width of 50 feet and regraded its entire length from its northerly end at Concord Avenue to the Waltham line, some 9,400 feet, all to be done at the expense of the City of Cambridge. Against this decision a vigorous protest was made, but no change in the decision was obtained so the work has been done the past season by Mr. Frank X. Saucier at a cost of about $10,000.

Thirty-two assistants have been employed at various times on this work. The expenditure for engineering expenses has been $11,636.58.

Appended will be found tables and data relating to rainfall.

HELIOTYPE PTG. CO. BOSTON

HOBBS BROOK BASIN.

GATE-CHAMBER AT WINTER ST. DAM.

Table showing Comparison by Months, of Number of Days in which Rain fell, and Total Precipitation at Roberts Dam, Hobbs Brook, Fresh Pond, and Harvard Observatory, Dec. 1, 1896, to Dec. 1, 1897.

		1896.	1897.											
		Dec.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Total.
Roberts Dam.	No. of Days in which rain fell.	3	8	5	11	9	10	8	8	9	7	2	13	93
	Total Precipitation.	1.58	4.38	2.41	3.50	2.72	4.50	5.48	4.70	4.76	2.71	0.39	6.22	43.35
Hobbs Brook.	No. of Days in which rain fell.	6	8	6	12	10	10	12	10	8	8	2	15	107
	Total Precipitation.	1.97	4.26	2.86	3.22	2.44	4.19	4.17	4.13	3.89	3.13	0.21	4.54	39.01
Fresh Pond.	No. of Days in which rain fell.	7	8	6	12	9	17	14	14	11	9	5	16	128
	Total Precipitation.	1.63	3.32	2.36	2.66	2.82	4.24	5.16	4.68	5.06	3.22	0.55	6.83	42.53
Harvard Observatory.	No. of Days in which rain fell.	7	7	8	11	8	12	9	8	8	8	4	15	105
	Total Precipitation.	1.57	4.01	2.53	2.92	2.70	3.78	5.98	4.06	4.47	3.00	0.40	6.45	41.87

Park Department.

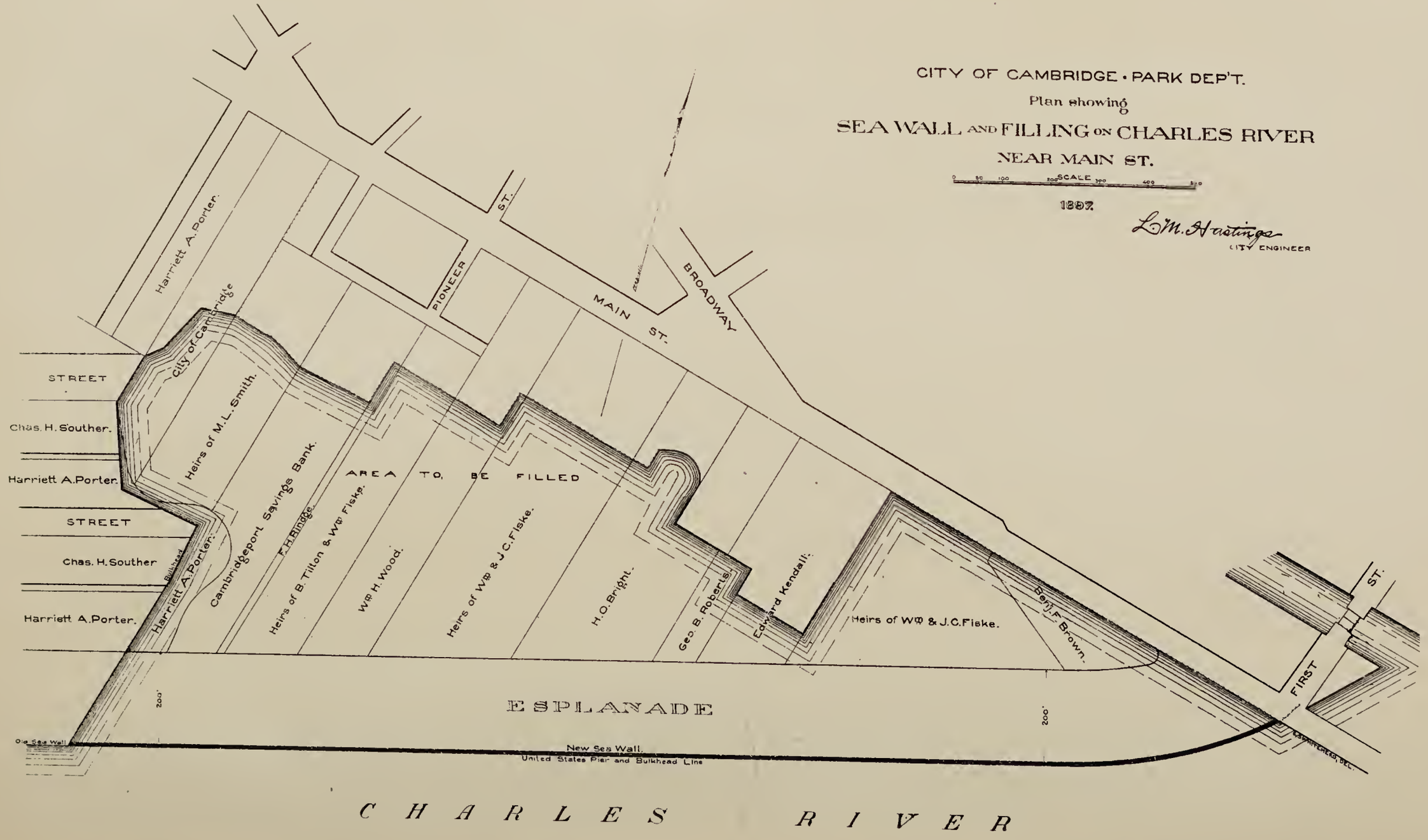
The principal engineering work done the past year has been in connection with the improvement of park land on Charles River.

Much time has been required in laying out the extensive construction carried out between Boylston Street and the Cambridge Hospital. About seventeen acres have been filled, graded, and largely finished and planted as a parkway. Four thousand lineal feet of shore line have been sloped and covered with stone riprap or heavy ballast gravel in a substantial manner.

While the filling of the low marsh land near the old Casino grounds was being placed, a very marked settlement of the filling suddenly took place, accompanied by a movement of quantities of mud and filling toward the river. For a considerable distance along the river shore at this point the hard bottom lies at a depth of about twenty-six feet below the old surface of the marsh ; being overlaid with soft marsh mud. To retain this mud and prevent it with the filling placed on it, from slipping into the river a bulkhead of timber sheet piling was driven through the mud into the hard material below, properly capped, and braced with inclined or spur shore piles. A contract was made with Messrs. John N. Hayes & Company on March 18, 1897, for doing this work. Three hundred and three lineal feet of bulkhead were placed at a total cost of $2,741.63.

Early in the season an arrangement was entered into with the various owners of flats on Charles River between Main Street and the lands of the Charles River Embankment Company by which the filling of all the flats and the proposed Esplanade was to be done jointly, and a sea wall enclosing these flats about two thousand five hundred feet in length on the river was to be built by the city. Pursuant to this agreement on May 17, 1897, a contract was made with Mr. Thomas A. Rowe to build the wall.

Soundings showed that the depth of mud on the line of the proposed wall varied greatly; in some places little or no mud was found while in one place hard bottom was about 26 feet below low


CITY OF CAMBRIDGE • PARK DEP'T.
Plan showing
SEA WALL AND FILLING ON CHARLES RIVER
NEAR MAIN ST.
SCALE
1897
L.M. Hastings
CITY ENGINEER
Harriett A. Porter.
City of Cambridge
PIONEER ST.
MAIN ST.
BROADWAY
STREET
Chas. H. Souther.
Heirs of M.L. Smith.
Harriett A. Porter.
STREET
Chas. H. Souther
Harriett A. Porter.
Harriett A. Porter.
Bulkhead
Cambridgeport Savings Bank.
F.H. Bingge.
Heirs of B. Tilton & Wm Fiske.
AREA TO BE FILLED
Wm H. Wood.
Heirs of Wm & J.C. Fiske.
H.O. Bright.
Geo. B. Roberts.
Edward Kendall.
Heirs of Wm & J.C. Fiske.
Benj. F. Brown.
FIRST ST.
ESPLANADE
200'
200'
Old Sea Wall
New Sea Wall.
United States Pier and Bulkhead Line
CHARLES RIVER

water level. In preparing a foundation for the wall the mud was first excavated till hard material was reached; the trench so made varying in width with the depth excavated. For a part of the distance just enough was taken out to allow the wall to rest on the natural bed of gravel. The deeper parts of the trench were then filled with good gravel obtained from a bank in the bed of the river near by.

In the deepest part of the trench large quantities of stone obtained from an old wall farther up the river at the former Gas Works Wharf was mixed with the gravel as put in.

On the foundation so prepared a heavy footing course of long stones was laid and upon this the wall proper built. The wall is also heavily ballasted behind with gravel and stone ballast. The masonry is similar in character to that built in 1895 at "The Front." The greater portion of the wall is now built and will be finished at an early day. There has been paid to date on account of the construction of the wall fifty-two thousand eight hundred and eighty-three dollars and twenty-five cents.

In connection with the construction of this sea wall a contract was entered into with the New England Dredging Company for filling the two hundred feet strip or "Esplanade" now owned by the City, and also conjointly, the abutting owners have contracted to fill the flats between the Esplanade and the present shore line near Main Street. It is expected that this work will be begun in the spring of 1898. By this arrangement an area of 1,313,311 square feet or over 30 acres of mud flats will be reclaimed, and the whole improvement is to be completed by the first of the year 1899. When this is done one of the largest and most important improvements ever attempted in the city will have been completed.

The survey and location of the park line on the Charles River Parkway has been practically completed; twelve stone bounds have been set at proper points to mark the line. A large number more will be needed when the lands are filled and improved so as to render the location of the bounds permanent.

A matter that will require early attention is the completion of the filling of Commercial Avenue opposite "The Front" and the

crossing of the Canal by a bridge connecting the two portions of Commercial Avenue.

The early completion of this Avenue is rendered more necessary by the recent decision of a special commission appointed by the court to abolish the grade crossings at Prison Point Street. By this decision the grade of Bridge Street at Prison Point Street and Commercial Avenue is to be raised about five feet. This will render necessary the raising of the grade of Commercial Avenue between Bridge Street and the Canal.

If Commercial Avenue is built and graded by the time the grade crossing is abolished, then the expense of raising the grade of Commercial Avenue is to be charged to the cost of the abolishment of the grade crossing.

Further than this it would seem as though the time had arrived when the avenue should be completed and the benefit to be derived from this improvement, now only partially completed, obtained. All the land has been taken for this purpose; it remains to complete the filling, construct the bridge across the canal, and surface the street its entire length some 2,450 feet.

From five to seven assistants have been employed almost constantly on engineering work connected with the Park Department The expenditure for the year for the purpose has been $3,813.03.

Respectfully submitted,

L. M. HASTINGS,

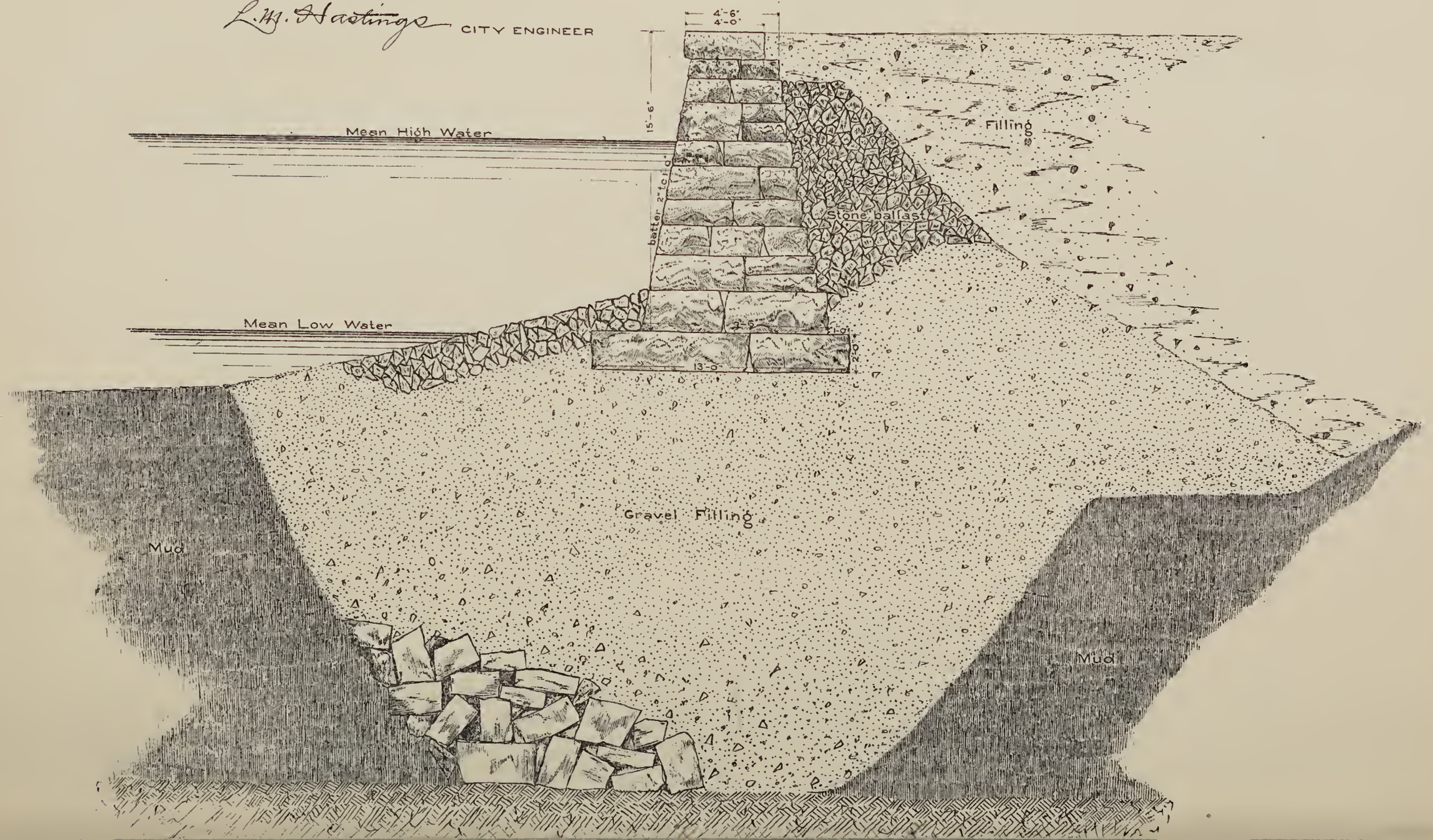
City Engineer.

CITY OF CAMBRIDGE, PARK DEP'T.

SEA WALL ON CHARLES RIVER

1897

L. M. Hastings CITY ENGINEER



REPORT OF THE SUPERINTENDENT OF PUBLIC BUILDINGS

Office of the Superintendent of Public Buildings,
City Hall, Cambridge, December 1, 1897.

To the Honorable the City Council of the City of Cambridge: —

Gentlemen: — In compliance with the requirements of Section 2, Chapter 13, of the City Ordinances, I have the honor as Superintendent of Public Buildings, of submitting to you the twelfth annual report of this department.

Since my last report decided changes have been made in our building laws, and I deem it proper at this time to give a brief history of this department. The data necessary to accurately trace the various changes which have been made in our building ordinances are wanting, but such as is obtainable is satisfactory proof that our city has been progressive in the consideration of its building interests. The first steps toward controlling the erection of buildings in this city was taken on March 18, 1863, when the City Council passed an ordinance requiring that all notices of intention to build should be filed with the Mayor and Board of Aldermen. The ordinance remained unchanged until November 24, 1868, when it was amended, applicants then being required to file a notice with the City Engineer and obtain from him the grades of the street. It was still further amended on December 29, 1869, requiring the City Engineer to give also the lines of the street.

The office of Superintendent of Public Buildings was established on June 18, 1873, but was abolished on March 4, 1874. The reason for that is not recorded. An amendment to the existing ordinance was passed July 2, 1873, regulating the construction of bay-windows and other projections over street lines. This amend-

ment rendered it necessary for the builder to first obtain a permit from the City Council.

The ordinance was further amended on April 11, 1877, by a regulation controlling the construction of chimneys, flues and fire escapes. A new building ordinance was adopted December 30, 1885, which created the office of Superintendent of Public Buildings and Inspector of Buildings and since that time this department has had much to do with the laws governing the construction of buildings in our city. This ordinance remained in force, with but slight changes, until the adoption of the present ordinance, June 1, 1897.

This plan of watching carefully the building interest has been adopted in other cities, the population of some of which is much smaller than that of Cambridge. Section 52 of the ordinance was amended in 1889, abolishing the right of the City Council to grant permits for bay-windows or other projections beyond the line of the street and making the same prohibitory.

In 1891, amendments were passed regulating the construction of brick party walls and the space required between wooden dwelling houses. On December 5, 1894, an ordinance was passed by the City Council, under authority of Chapter 481 of the Acts of the Legislature of 1894, establishing a Fire Limit and requiring that the exterior walls of all buildings within certain districts should be made or covered with incombustible material. The height of wooden dwelling houses was also restricted.

Our building ordinance had undergone so many changes and was found to be so defective, especially after the establishment of a fire limit, that it was deemed desirable to make radical changes in it. Consequently the Committee on Ordinances was instructed to prepare and introduce such revisions as would meet with the needs of the department. Early in June of 1897, the Committee made its report which resulted in the adoption of an entirely new building ordinance by the City Council. The date of its adoption was July 1, 1897.

The wisdom of this measure has already been demonstrated in many instances. On account of the continual changes in the mode of construction of buildings, and materials used, it is necessary that

we should look earefully after the building interests, which means much to our city in future years. In all progressive steps taken we should not allow individual interests to interfere with our building regulations, but should rigidly enforce established laws. We are laying the foundation for the future, and a wise and careful enforcement of our building laws means much for the safety of life and property in years to come. I am confident that the time is coming when a State law will be enacted, regulating the construction of buildings in cities of from fifteen to twenty thousand population. Such a law would greatly overcome complications which are constantly arising, owing to the confliction of building ordinances with the statutes of the Commonwealth.

With the introduction of the new building ordinance, the duties and responsibilities of this department have greatly increased. Constant and untiring efforts are made to secure the enforcement of the ordinance, and it is a pleasure to note the promptness with which builders, as a rule, have been ready to comply with each and every request. The greater part of the violations are due to the failure of the builder to rightly interpret the law.

Central Square Building, Ward 4.

An order was passed by the City Council January 19, 1897, directing that certain changes be made in that portion of this building used for the Police Patrol quarters. These changes were made necessary in order to accommodate the Emergency Ambulance which had been placed in charge of the Police Department. The expense of the changes was ordered to come out of the appropriation for the care and repair of public buildings, and the amount to be expended was not to exceed one thousand dollars. In accordance with the order, plans and specifications were prepared in this department and an advertisement for bids inserted in the Cambridge Chronicle, February 13, 1897. In response thereto four contractors submitted estimates as follows : —

William Crane	$938 00
William H. Norris	900 00
Ross & Cosgrove	850 00
L. W. Crowe	760 00

L. W. Crowe, being the lowest bidder, was awarded the contract. He completed his work April 2, 1897. Three new stalls were built, the old wooden stairs in the rear of the stable were taken down, and a circular flight of iron stairs was built in the northwest corner of the apparatus room, affording easy access to the sleeping rooms above, occupied by the drivers. A portion of the flooring was removed and an asphalt floor laid in order to give better facilities for washing the wagons. The brick hose tower in the first story, which on account of its location obstructed the light from the window as well as taking up some valuable space, was removed. Superior heating and sanitary improvements were also introduced. The increased accommodations, made possible by the changes in this building, have demonstrated the wisdom of this work. The total amount expended was $975.

The boilers in this building, upon inspection by Mr. E. B. Dale, were found to be in a dangerous condition and a continuance of their use would have been a menace to life and property. Mr. Dale's report was fully indorsed by the State Inspector of Boilers, and steps were immediately taken to replace them with new boilers. An advertisement calling for bids for furnishing and setting two horizontal tubular boilers in the building, was published in the Cambridge Chronicle, May 22, 1897. In response to this advertisement nine estimates, ranging from $2,060 to $1,465, were received. The latter figure was submitted by the Roberts Iron Works Company of Cambridge and the contract was awarded to that firm. The work was completed and accepted July 30, 1897. These new boilers are of a larger pattern than the previous ones used there, but owing to certain changes in the piping and other improvements, it is expected that the yearly consumption of fuel will be lessened very considerably and that the heating of the building will be improved. The total cost in connection with these changes was $1,486.

An order was passed by the City Council on September 28, 1897, authorizing the Superintendent of Public Buildings to contract for certain changes to be made in the quarters used by the Chemical Engine Company, in this building, with or without ad-

vertising for proposals therefor. This work was carried on by the day and without interrupting the service of the Chemical Company and therefore has been somewhat delayed so that is is impossible for me to make a report of the cost at this time, although its completion is a matter of a few days only. The flooring was found to be defective in many places, making it necessary to replace a large portion of it with new material. The old entry way and stairs were removed in order to give additional stall room and an extra window was put in. On the second floor a bath room has been fitted up for the use of the permanent men. A new flight of stairs has been built making the access to the sleeping rooms more convenient.

A careful inspection of the present accommodations will, I think, satisfy the most critical that the money spent here has been well invested and that the improved quarters justify the outlay.

Old Engine House, Ward Five.

The ward room in this building is at present used for school purposes and the police department continue to use a portion of the first floor. The remainder of this building is unoccupied and as its future use is uncertain, it does not seem to me wise to make any extensive changes in its arrangements. To do so will require a large appropriation. I have carefully inspected this building and do not consider that the city will be warranted in expending any considerable sum of money upon it. Its location upon the lot and the nature of its construction render it unfit for changing. The masonry is in a poor condition and would require extensive repair should the building be enlarged.

Bath House, Ward Four.

This building requires a large outlay yearly in order to keep it in a condition suitable for use. It will be necessary the coming year to expend at least $500 upon it. The building is used from June to October each year and considering the large number of people who avail themselves of its privileges, I would recommend

that a new building be provided. As the bath house is exposed to the weather in winter and is without proper moorings, I would recommend that the cost of a proper mooring be included in the cost of a new building.

Amount expended on the building the past year, $388.98.

Recommended for a new building $3,000.

City Hall.

The customary repairs have been made on this building. Unusual pride is taken by its custodians in keeping it in good condition, and the city is to be congratulated upon the manner in which its Hall is cared for. The new system of heating and ventilation, the details of which were given in my last annual report and in which its successful working was predicted, has proved very satisfactory, both as regards increased heat and better ventilation and the decreased consumption of fuel. The Committee which recommended this plant may well feel pleased with the results obtained and its workings the past year. The decreased consumption in coal was about thirty-five tons.

I would recommend that the large room in the basement, now used by the Water Department as a workshop, be fitted up for the use of other City Departments, as at present several of them are very much cramped for room. It is a question whether we should allow a part of a magnificent building like our City Hall to be used as a machine and repair shop, and in view of the increased danger from fire by its continued use for this purpose, I heartily recommend a change at an early date. This department is given a yearly credit of two thousand dollars from the Water Board for the use of their rooms, but that sum is partially offset by the increased cost of running the plant.

The School Board is at present using a room on the third floor for storage purposes, and at certain times tons of books, etc., are stored there. This room could be used for office purposes, and if the space in the basement now used by the Water Department were taken for the School Department, it would greatly relieve

the wear and tear on the elevator (which was built for passenger traffic only) and also reduce the danger from fire.

The wooden floors in the basement are greatly in need of repairs, the timbers having become badly decayed, leaving the flooring in a loose and dangerous condition. I recommend that a new floor asphalt or granolithic be substituted for the present wooden floor.

By an order passed by the City Council May 4, 1897, the Superintendent of Public Buildings was requested to replace the old design of the City Seal over the entrance by a device of the new seal. This request has been complied with and those who have expressed opinions upon the workmanship of the new design pronounce it of a high order.

An order of the City Council was approved December 23, 1896, appropriating $3,000 for the purpose of installing in the City Hall an engine and dynamo plant, with switchboard and necessary foundation, piping and wiring for electric lighting purposes. On January 22, 1897, an advertisement was inserted in the Cambridge Chronicle calling for estimates on the above work. Plans and specifications were prepared by or under the direction of Mr. Charles F. Hopewell, Inspector of Wires, who gave careful study to the whole subject and investigated the various combinations presented. Bids were received from twenty different bidders for the complete installation of a 9x10 engine directly connected with a 25 K. W. dynamo, suitable foundations, all necessary piping and a slate switchboard with necessary switches and instruments. The maximum acceptable bid was for a unit consisting of a Westinghouse dynamo and Ames engine at $2,755. The minimum bid was for a Watertown engine and Eddy dynamo at $2,414. The twenty bidders submitted a total of 103 different bids for the plant, although several of the bids were for the same combination of units at different prices.

The highest estimated price was for a Fitchburg engine and Walker dynamo unit at $2,910. The contract for doing this work was not awarded, as the appropriation for doing the same was not included in the annual budget for 1897. The competition for furnishing and doing this work was beyond all expectations, and the

competitors must have been to a large expense in preparing plans and estimates, and I am satisfied that had the contract been awarded at that time, the city would have had this plant installed at a very reasonable figure. I am still convinced of the wisdom of the city maintaining its own electric lighting plant in our City Hall.

Brattle Square Building, Ward One.

A complaint was received at this office June 1, 1897, to the effect that the sanitary condition in the basement of this building was a menace to the health of those whose occupation and official capacity confined them there. Immediate steps were taken to remedy the cause of the complaints. Authority was asked of the City Council to enter upon and perform the necessary work without advertising for proposals, as the nature of the work was such that no intelligent estimate of its cost could be made, since it was necessary that all the lines of soil pipe should be dug up and exposed before it could be told what should be done.

One of the leading plumbers of this city was secured to superintend and do the work and in his report to this department, he says: "On digging up the floor we found an earthen drain which was broken, allowing water from the sinks in the battery rooms on the third floor and in the basement to run away and soak into the soil under the brick paving, instead of going off into the sewer as it should. On closer examination we found that the drains in the basement were all of earthen pipe and as the ground had settled, the joints were broken throughout the building.

" After exposing the drains to view and before work of laying the new drains was commenced, we called your attention to the condition and on your order we then put in a new six-inch extra heavy cast iron drain through the centre of the basement, putting four inch and five-inch branches in place of earthen branches and connecting them with upright iron piping throughout the building.

"The drain from the horse stalls we did not connect with the drainage system, but have run it separately to a cesspool at the back of the building and from there connected with the main sewer. We have also left branches at different places in the floor

with back water gates and have left the whole drainage system in a perfect condition, having tested it with the water test. One line of soil pipe to the battery room was carried through the roof for ventilation. All of this work called for considerable digging and mason work as it was all under brick paving that was laid in cement mortar, causing a great expense for this, as it was necessary to run to all the different parts of the building, requiring new mason work throughout.

"Where the new soil pipe passes through the rooms occupied by the Fire Department for sleeping rooms and the Armory rooms, some carpentering work such as cutting through floors and casing pipes was required."

The wisdom of the work done is apparent, as a careful inspection of recent date shows a great improvement, fully justifying the outlay. Such construction as was found in this building proves conclusively poor economy in using inferior materials in order to keep the original cost of the building at a low figure.

The cost of these changes was $2,507.41.

City Building, Ward 3.

An inspection of the boiler in this building was made by Mr. E. B. Dale in the early summer, and it was found to be defective and beyond repair, in consequence of which it was condemned. A boiler owned by the city and stored in the Brattle Square Building was substituted and is working very satisfactorily.

Complaints were often received to the effect that the roof of this building leaked badly. A careful inspection was made, and it was found that water from the roof ran in through the wall and along parallel to the plates in a pipe. This had burst and the water flowed down the walls to the basement. This was remedied by taking the water from the gutters by goose-necks and proper conductors and since these changes were made no complaints have been received.

Rifle Range, Lexington.

A portion of the five hundred and six hundred yard target house and bulwark was partially destroyed by a supposed incendiary fire

March 31. Upon being inspected it was found that the Range had been damaged to the extent of nearly four hundred dollars. Immediate steps were taken to rebuild the damaged portion and replace the same to its original condition.

The expense incurred was $396.92.

Other improvements ordered by the State Department of Rifle Practice are being done, which will cause an outlay of $600.

Care and Repair of City Buildings.

CITY HALL.

For Fuel	$1,319 30
Electric lighting	1,248 90
Gas	98 90
Repairs	878 05
Supplies	1,018 24
Janitor	1,200 00
Engineer	1,350 00
Fireman	734 00
Watchman	734 00
Sundry labor	2,357 50
Total	$10,938 89

WARD ONE BUILDING, BRATTLE SQUARE.

For Fuel	$1,180 24
Gas	508 30
Lighting tower clock	120 00
Repairs	2,516 71
Supplies	63 63
Janitor	1,406 65
Total	$5,795 63

WARD FOUR BUILDING, CENTRAL SQUARE.

For Fuel	$477 50
Electric lighting	200 00
Gas	137 42
Repairs	1,580 92
Supplies	33 97
Janitor	1,406 65
Extra labor	112 00
Total	$3,948 46

POLICE DEPARTMENT.

Police Station 1, Brattle Square	$153 31
Police Station 2, Central Square	1,524 85
Police Station 2, Fourth Street	1,490 26
Total	$3,168 42

FIRE DEPARTMENT.

Engine House No. 1, Brattle Square	$207 18
Engine House No. 2, Massachusetts Ave.	166 97
Engine House No. 3, Gore, corner Third Street	79 66
Engine House No. 4, Massachusetts Ave.	903 81
Engine House No. 5, Inman Square	422 57
Engine House No. 6, River Street	30 67
Engine House No. 7, Main Street	116 89
Hook and Ladder No. 1,	30 25
Hook and Ladder No. 2, Portland Street	90 39
Chemical House No. 2, Lexington Ave.	125 92
Total	$2,174 31
Miscellaneous.	$1,425 61

Schoolhouses, Care and Repair.

With the yearly addition of new buildings the cost of care and repair must necessarily be increased and be made at the proper time. There can be nothing of greater importance to the public than the proper care and sanitary condition of our schoolhouses. When we consider that our city is to-day providing accommodations for over thirteen thousand pupils, the importance of keeping our schoolhouses in a healthy, comfortable and attractive condition, becomes apparent.

Requirements in the line of modern improvements are emphasized more strongly and are becoming more exacting each year The demand is to modernize our old schoolhouses, and to do this a liberal expenditure of money is necessary. It is often found impossible to make changes that will be satisfactory in many of the old buildings owing to their faulty construction. In such schoolhouses, I recommend that in the near future steps be taken looking towards their abandonment. The study of the questions of ventilation and

sanitary improvements in schoolhouses is attracting much attention and is of national importance.

The question, which some use as an argument, is asked, Did not our fathers and those before them in their day attend school in buildings wholly devoid of sanitary and ventilating methods and why not let the same conditions exist in the buildings of to-day? Why go to this additional expense? Such questions and imaginary arguments are easily met by the fact that a constant study is being made by competent scientists and specialists, who are able to trace the cause of disease, deformation and the loss of eyesight to the school room. I do not think that our city which is foremost in its educational facilities can afford to have private schools constantly springing up in it, offering conditions from a sanitary and ventilation standpoint superior to those afforded in our public schoolhouses. The importance of this subject cannot be too seriously considered.

The whole number of occupied schoolhouses in our city is thirty-nine, there being twenty-three of brick and sixteen of wooden construction. I will call your attention only to those upon which an unusual amount has been expended the past year, and refer you to the tabulated table in this report as to the amount expended on the others.

New Latin School Building, Trowbridge and Ellery Streets.

At the time of my last annual report the plans for a new Latin school building had been approved and the architects, Messrs. Hartwell, Richardson & Driver, of Boston, were at work on the detail drawings. On January 30, 1897, in response to an advertisement inserted in the Cambridge Chronicle, there were submitted thirty estimates for the construction of the building. Following is a list of the contractors, together with their estimates: —

Hortons & Hemenway	$238,781 00
George Dawson	236,949 00
Wm. T. Eaton	231,136 00
Mead, Mason & Co.	226,841 00
Marshal N. Stearns	226,163 00

L. P. Soule & Son	$223,935 00
Angus MacDonald	223,924 00
Donahue Bros.	220,000 00
John J. Flynn	219,963 00
Kerrens Driscoll	217,243 00
Maguire & Penniman	215,000 00
T. Brennan & Co.	214,959 00
Frank S. Robbins	214,000 00
Cutting, Bardwell & Co.	211,870 00
James Fagan	211,212 00
Mack & Moore	208,000 00
John Sweatt	205,445 00
Norcross Bros.	204,400 00
J. McNamara & Sons	204,400 00
Edward Lynch & Co.	204,331 00
Darling Bros.	203,000 00
John Y. Mainland	202,500 00
Geo. G. Baker	201,500 00
J. J. & T. F. Mack	199,941 00
Chas. H. Dodge	197,887 00
J. A. Colson	197,690 00
Connery & Wentworth	196,514 00
H. P. Cummings	192.900 00
W. L. Clark & Co.	191,617 00
J. S. Jacobs & Son	179,437 00

The estimates range in amounts from $238,781 to $179,437, the latter being that of J. S. Jacobs & Son of Boston to whom the contract was awarded, the same being approved April 8, 1897. Amount of bonds required being $50,000.

Active operations were begun on May 1, 1897, the first foundation stone being set in place May 8. This work has continued up to the present time without any serious delays. At the present time the external walls are constructed to their full height and a portion of the stone cornice is already in place. The truss work which is to support the roof is fast taking shape, and it is safe to predict that in a short time the roof will be in place.

After breaking ground for the foundation work it was deemed advisable to make additional provision for the great weight coming upon the foundation owing to the nature of the soil, the same being

of a soft gravelly nature, and accordingly it was decided by this department, after consultation with the best authority, to carry the foundation to an extra depth in certain portions of the building. A large portion of this extra foundation was composed of two and one-half feet of concrete filling the entire width of the trench. This concrete was composed of Portland cement, broken stone and sand, being mixed in the proportion of one part cement, two of sand and four and one-half of broken stone, and was mixed under the personal supervision of this department.

In this work 261 cubic yards of concrete were used. The carrying strength of this work is forty tons per superficial foot and the greatest weight coming upon any one part of the foundation is about sixteen tons per superficial foot so that it will be seen that we have made ample provision and have a firm foundation, which is one of the most essential things in connection with a building.

The money required for this extra outlay, I consider has been wisely expended since precautions of this nature taken at the beginning often save a vast amount of trouble and expense later in the process of construction. Some of the items which go to make up the total outlay in this building are those on account of excavating, concreting, brick work, stone work, iron and carpenter work. It is worth noting at this time that the materials in the construction of this building have been furnished largely by Cambridge firms.

The granite used in the foundation and underpining was all furnished by S. & R. J. Lombard and A. Ford & Son respectively, both firms doing business in Cambridge. In this work there was used about 3,800 tons. The lime-stone used for the trimmings was quarried at Bedford, Indiana, and delivered to the Connecticut Steam Stone Co. at East Cambridge, where the large blocks were cut into the various moulded courses, capitals, brackets, etc., and delivered to the building ready to be set in place. A personal inspection of this work will, I think, satisfy the observer that the selection of this stone was wisely made.

The brick used for the exterior were made in Fallston, Penn., and furnished by Fiske, Holmes & Co. of Boston. All the common brick used were made by the Bay State Brick Company at North

Cambridge, and in order to construct the solid walls of masonry in this building, it has been necessary to use about 3,240,000 brick. The iron work is being furnished by three different firms, one of which is the Chelmsford Foundry Co. at East Cambridge.

All the lumber required has been furnished by W. H. Wood & Co. and the total amount required in the construction will be about 850,000 feet. It may be interesting at this point to make a few comparisons in order to show the large amount of material required and the extent of area covered by this building. The superficial area covered is 31,060 square feet, while the total floor area is about 112,312 square feet, or about two and one half acres. If the brick used in this building were to be placed in a straight line laid end to end they would reach a distance of 424 miles and if laid in a space ten feet square would reach to the height of 1,472 feet.

Heating and Ventilation.

Very careful attention has been given to the heating and ventilating system for this building. The system to be used has been planned by Prof. S. Homer Woodbridge, the well-known specialist on this subject. The contract for installing this part of the work was awarded to Messrs. Lynch & Woodward of Boston and the work has already begun. The boiler room is to be fitted with three 74 H. P. boilers. There are 7,000 square feet of heating surface distributed among the several rooms, while in the heater for tempering the air for ventilating purposes there are 3,700 square feet of heating surface.

The tempered air is distributed throughout the building by a 9′ 0″ fan of the Meigs-Briggs pattern having, at 150 revolutions per minute, a delivering capacity of 4,756,000 cubic feet of air per hour. This fan is to be driven by an 18 H. P. engine which is also to take care of some other accessions required to completely equip the building with a modern heating and ventilating system. The air is to be distributed from the fan through ceiling mains or ducts in the basement. The air discharge is to be effected through generously proportioned flues which are to be gathered in the attic into four main vent stacks in which accelerating fans may be placed should they be found necessary.

The temperature of all the principal rooms is to be automatically regulated. The temperature of the air supply is to be only high enough to prevent its dropping floorward as a sensible draught. The building is to be warmed by a low-pressure steam system and for the most part by the direct method and by runs of steam pipes placed near the floor on the exposed sides of the rooms. The large audience hall, the library and a few minor rooms are to be warmed by indirect method. Provision has been made for a first-class equipment of this portion of the work, and a most satisfactory result is expected.

Russell School, Ward One.

In my last annual report I referred in detail to this building, although it was not wholly completed until February, 1897. Owing to the lateness in the school year, it was not occupied until the opening of the fall term in September.

An appropriation of $3,000 was made for furnishing the building and $2,934.39 of that amount was expended. The furniture was supplied by the Chandler Adjustable Chair and Desk Co., of Boston, under contract. The teachers' desks and the settees for the hall were furnished by the Derby Desk Co., of Boston, also by contract. The pupils' chairs and desks are of the latest adjustable pattern, and are adapted to the use of primary and grammar grades.

This building is located in a district which has not been developed to any great extent, but the surrounding conditions will undoubtedly make it entirely a residential district. The new schoolhouse makes it possible to close the Corlett School and afford some relief to the Peabody and Washington Schools.

The architectural features of this schoolhouse have been commended by experts from other cities. The building will rank as one of the best in this city, both in regards to convenience and general accommodations. It was thought at first that six rooms would be sufficient for the first year's needs, but nine out of the ten rooms are already occupied. I recommend that the sum of $1,000 be appropriated the coming year to defray the cost of building an iron fence around the entire lot. There is still an

unsettled account with the contractors which has not yet been satisfactorily adjusted, but it is nearly offset by credits due the city under the contract.

Sleeper School, Ward Five.

This building was damaged by fire to the amount of $1,000 on March 5, 1897. Smoke was discovered by the teachers about 3 P. M., coming from the warm air pipes. With rare presencc of mind and unusual coolness they safely conducted the pupils from the building without any apparent confusion. Such bravery and discipline displayed by both teachers and scholars is very rare and is highly commendable. The fire department responded promptly to the alarm and did excellent work by keeping the fire well in control so that the damage was confined largely to the interior of the building. The roof was slightly damaged and a small portion of it had to be replaced.

Complaints had previously been received by this department to the effect that at times a strong odor of burning wood was noticeable in the building and steps were taken to investigate the reason for the odor. The cause was located in such a place that the closest investigation could not detect it, without removing the partitions and masonry work. After the fire an investigation was made and a very serious fault in the construction was discovered. It was found that summers which were directly over the furnaces and concealed by masonry work, came in direct contact with the warm air pipes used for conveying heat to the various rooms. This undoubtedly was the cause of the fire. In replacing the damaged portion this defect was entirely remedied by using fireproof material.

The same construction was found to exist in the other part of the building and it was deemed advisable to rèconstruct this portion and thus prevent another fire. While the loss caused by the fire was about $1,000 the total amount expended on the building was $1,913.20 the additional $913.20 being required to reconstruct that portion not damaged.

Taylor School, Ward Three.

When this school was constructed in 1895 the third story, with the exception of the Assembly Hall, was left unfinished. During the summer of this year two school rooms, two ante-rooms and the corridors have been finished and fitted up, making additional accommodations for one hundred pupils. Plans and specifications were prepared in this office and the contract for doing the work was awarded to Mr. I. B. Rice for the sum of $1,670. The work was completed September 1, 1897. The total cost for the work including heating, painting, ventilating and furnishing was $2,957.95.

Boardman School, Ward Two.

Complaints had been frequently received by this department of the unhealthy condition of the sanitary arrangements of this building, both from teachers and neighboring property owners, who expressed surprise that the city should permit conditions to exist in a public building which would not be allowed in a private building. In view of this, and at the urgent request of members of the School Committee, the removal of the outbuildings and the placing of the sanitaries in the basement of the main building was decided upon. Plans and specifications which called for the remodelling of the basement in this building to meet the needs of the new arrangement were prepared by this department. The contract was awarded to Patterson & Fox of this City, who performed the work as specified. Two new staircases were constructed to the basement from the first floor. Nine individual closets for the girls and seven for boys together with slate urinals were placed in the basement. Toilet accommodations were also provided for the teachers and the entire basement floor concreted.

In certain times of the year water was constantly standing on the surface in the basement, making a very unhealthy condition of affairs. This defect was given attention, so that at the present time the basement is properly drained. Two additional entrance were made to the basement from the yard, thus affording a means of access to the toilet-rooms without being obliged to pass through

the main entrances. The old brick building in the rear was removed and the grounds graded.

Careful attention was given to ventilation and a system introduced which, judging from the reports of the teachers, is satisfactory in every way. It is a relief to feel that the causes of the complaints which were constantly being received from parents and teachers have been remedied. While it may not be the best policy to have sanitary arrangements in the basement of school buildings, in some cases, such as in this instance, it is impossible to do otherwise. This department agrees with the opponents of the idea and is confident that in new buildings the best method is to locate sanitaries in a building entirely isolated from the main building, but connected with it by means of a corridor on a level with the basement floor. This plan affords an open space between the buildings and prevents any vitiated air from reaching the school quarters. The total amount expended for these changes in this building was $2,508.28.

Dana School, Centre Street.

Early in the fall complaint was received by this department from several citizens having children in this school of the condition of this building and immediate steps were taken to remedy, so far as possible any imperfections of a serious nature, that were found to exist. In company with his Honor the Mayor, a visit was made to the building and a careful inspection made. While we found a condition of things not desirable for a school building, we did not feel that the matter was so serious as to cause undue alarm.

The State authorities were called upon to make an investigation, and a report from John T. White, Esq., State Inspector of Buildings, was received by this department and the recommendations which he made were carried out as far as practicable. Besides the suggestions offered by the Inspector, it was deemed wise to add a fire-escape to the rear of the building, thus affording additional means of egress in case of fire. This fire-escape is wholly protected from the weather by being inclosed in a sheathed porch.

Washington School.

This building is in a condition that will require immediate attention. Its construction is of such a nature, having been built at a time when little or no attention was given to the subject of ventilation, that the arrangement of the rooms will not permit of any modern improvements being made. An inspection of this building has been recently made by J. T. White, Esq., State Inspector of Buildings and his report is now at this office. He suggests that, owing to the seriousness of the conditions found to exist in this building, either an extensive outlay be made, which he agrees cannot be done and satisfactory results obtained, or that its use be discontinued in the near future.

Corlett School, Ward One.

This schoolhouse is now used for kindergarten purposes only. During the summer months new sanitary accommodations were placed in this building. The old furniture was removed and new furniture adapted to this grade of scholars substituted.

Extra School Accommodations.

Owing to the crowded condition of our school houses it is necessary to furnish and maintain the following places for school accommodations: —

A room intended for a store on Concord Avenue near the corner of Huron Avenue, in a building owned by Mr. John F. O'Brien. This was hired at a rental of $200 per year. It has been fitted up and is now used for kindergarten purposes. Another room in the building at the corner of Cedar and Dudley Streets, owned by Mr. O'Brien, is also in use for school purposes, the yearly rental being $300.

It was found necessary to provide additional quarters in Ward 2 to accommodate the large number of pupils that could not be properly seated in the school buildings and two rooms in a building at the corner of Broadway and Clark Street have been rented at a cost of

$276 per year. Many changes were necessarily made in these rooms in order to put them in a condition suitable for school purposes. The amount expended for this purpose was $249.48.

The Ward Room in Ward 5 is now used for a school room, necessitating the constant services of a fireman to run the boilers, under the requirements of statute law. This entails quite an expense when it is considered that only one room is used for school purposes. The cost of janitor service and the heating is about as much as it would be if several rooms were used.

The cost of maintaining rooms outside of the regular school houses, the past year, has been over fifteen hundred dollars. It must be remembered also that such places as can be provided are almost wholly wanting in ventilating facilities and sanitary accommodations, both of which are absolutely necessary from the standpoint of health considerations. In view of these facts I cannot too strongly recommend that the city should have sufficient school houses to properly accommodate all the pupils of the city.

The amount expended the past year for new furniture exclusive of that for the Russell School was $1,396.95.

Supervision of Janitors.

It is gratifying to acknowledge the valuable services of Mr. E. B. Dale, who has been in charge of the janitors of school buildings and who has also had the supervision of the heating and ventilation of the buildings. The success of his labor has been fully demonstrated in the more economical heating of the buildings and in giving much valuable information to janitors, which increases the value of their services. In his report to this department I quote the following: —

"In making my annual inspection of the boilers and other heating apparatus, I found them in much better condition than one year ago. I found the heating system throughout the city in a first-class condition. During the first year of my service in this capacity, extensive repairs were necessary to put the system in good working order, and this was done in 1895–96. By a well

organized system of rules governing the janitors in the care of boilers the whole heating system is in splendid condition."

He also calls attention to the new heating plant introduced in our City Hall a year ago, claiming that it has given general satisfaction and caused a saving of thirty-five tons of coal over any previous year's consumption.

Amount of Coal Consumed in Various Schoolhouses.

	Tons
Agassiz	50
Allston	70
Boardman	55
Corlett	10
Cushing	15
Dana	25
Dunster	25
Felton	35
Gannett	50
Gannett (old)	30
Gore	40
Harvard	95
High	275
Holmes	15
Lassell	25
Latin	85
Lee Street	30
Lowell	26
Morse	175
Otis	40
Amount carried forward	1,171
Amount brought forward	1,171
Parker	50
Peabody	75
Putnam	170
Quincy	18
Reed	23
Riverside	30
Sargent	30
Shepard	70
Sleeper	75
Stearns	25
Tarbell	35
Taylor	100
Thorndike	80
Washington	80
Webster	135
Wellington	170
Willard	75
Wyman	40
Total	2,452

Real Estate Belonging to the City.

SCHOOLS.

Buildings.	Location.	Feet of Land.	Valuation.
Agassiz	Sacramento St	19,689	$24,000 00
Allston	Boardman St	15,193	34,600 00
Boardman	Windsor St	10,018	16,500 00
Bridge	Pioneer St	4,646	1,900 00
Corlett	Holworthy St	10,000	4,000 00
Cushing	Cushing St	14,787	4,500 00
Dana	Centre St	14,317	6,300 00
Dunster	Concord Ave	10,000	6,000 00
Felton	Amory St	15,090	10,500 00
Gannett	Jefferson St	15,434	15,000 00
Gannett (old) / Wellington	Columbia St	27,673	50,300 00
Gore	Gore St	9,900	29,000 00
Harvard	Inman St	20,494	56,000 00
High	Broadway	74,366	238,000 00
Holmes	Hilliard St	11,182	10,500 00
Lassell	Charles St	10,000	10,500 00
Latin	Fayette St	37,828	55,900 00
New Latin School	Trowbridge and Ellery Sts.	79,759	45,000 00
Lee St	Lee St	10,100	15,000 00
Lowell	Lowell St	12,033	9,500 00
Morse	Brookline St	25,650	80,000 00
Otis	Otis St	8,270	16,000 00
Parker	Broadway	12,329	26,000 00
Peabody	Linnæan St	21,813	35,000 00
Putnam	Fourth St	14,400	74,300 00
Quincy	Mason St	8,469	15,000 00
Reed	Reed St	12.000	5,200 00
Riverside	Putnam Ave	11,198	8,000 00
Russell	Larch St	33,073	45,000 00
Sargent	Broadway	9,995	7,000 00
Shepard	Massachusetts Ave	14,755	37,000 00
Sleeper	Dudley St	21,284	29,000 00
Stearns	Harvard St	10,050	8,000 00
Tarbell	Grigg St	19,500	12,000 00
Taylor	Charles St	23,592	45,000 00
Thorndike	Thorndike St	10,027	34,000 00
Washington	Brattle St	14,951	35,000 00
Webster	Upton St	25,839	59,000 00
Willard	Niagara St	20,079	30,000 00
Wyman	Rindge Ave	14,347	9,500 00
New Schoolhouse Lot	Norris St	25,700	6,200 00

CITY BUILDINGS.

Ward One	Brattle Sq	16,153	$76,000 00
Ward Four	Central Sq	13,028	60,500 00
City Hall	Massachusetts Ave	47,878	272,000 00
Station Four	Massachusetts Ave	6,516	10,000 00
Station Three	Fourth St	4,220	22,100 00
Engine House No. 2	Massachusetts Ave	10,000	34,000 00
" " No. 3	Third St	10,100	23,000 00
" " No. 4	Massachusetts Ave	9,532	29,000 00
" " No. 5	Inman Sq	6,000	15,000 00
" " No. 6	River St	4,994	14,500 00
" " No. 7	Main St	9,400	19,300 00
Hook and Ladder No. 2	Portland St	11,931	15,000 00
Chemical No. 2	Lexington Ave	15,262	14,500 00

Schoolhouses.

Schools.	Fuel.	Light.	Repairs.	Supplies.	Extra Labor.	Janitor.	Totals.
Agassiz	$285 45	$17 13	$178 84	$61 92	..	$611 97	$1,155 31
Allston	354 90	211 34	167 10	104 00	..	414 27	1,251 61
Boardman	314 89	34 96	2,708 86	104 48	..	629 13	3,792 32
Corlett	47 60	..	291 45	127 00	$8 00	235 92	709 97
Cushing	106 85	..	24 95	32 52	..	235 92	400 24
Dana	131 93	7 82	225 82	15 64	..	277 45	658 66
Dunster	126 38	..	66 30	37 98	..	498 05	728 71
Felton	174 30	11 73	152 00	6 40	..	277 45	621 88
Gannett	246 20	34 62	111 70	13 00	..	471 84	877 36
Gannett (Old)	..	14 83	6 85	..	..	498 06	519 74
Gore	189 50	17 82	477 72	34 25	..	734 00	1,453 29
Harvard	594 80	46 80	331 34	61 75	..	1,048 55	2,083 24
High	1,415 40	344 15	561 78	169 73	294 55	1,800 00 812 63	5,398 24
Holmes	79 10	3 11	61 42	21 50	..	354 86	519 99
Lassell	172 90	..	105 52	4 27	..	367 00	649 69
Latin	440 10	12 77	393 85	3 75	3 00	857 19	1,710 66
Lee St	183 15	71 48	131 78	166 62	5 75	734 00	1,292 78
Lowell	127 01	92	82 47	13 96	..	309 41	533 77
Morse	884 70	3 21	229 30	17 75	..	1,048 55	2,183 51
Otis	197 00	7 59	144 89	25 53	..	629 13	1,004 14
Parker	334 65	9 22	118 55	43 65	..	524 26	1,030 33
Peabody	417 71	2 53	313 68	9 74	..	734 00	1,477 66
Putnam	872 20	177 92	148 92	98 85	293 00	1,048 55	2,639 44
Quincy	92 38	1 26	17 99	12 34	..	309 43	433 40
Reed	113 68	..	20 67	26 54	..	367 00	527 89
Riverside	154 35	..	192 85	13 65	..	340 77	701 62
Russell	580 90	..	459 76	72 45	..	382 56	1,495 67
Sargent	156 00	80 62	159 72	99 53	..	414 28	910 15
Shepard	355 60	59 10	217 47	21 82	..	734 00	1,387 99
Sleeper	394 80	..	1,913 20	191 67	10 00	629 13	3,138 80
Stearns	126 70	35 07	130 40	9 77	..	277 65	579 59
Tarbell	177 15	..	376 49	26 78	..	340 78	921 20
Taylor	509 98	..	2,407 60	610 18	..	734 00	4,261 76
Thorndike	417 80	122 47	122 90	28 88	..	734 00	1,426 05
Washington	601 35	70 84	248 18	94 45	..	588 85	1,603 67
Webster	655 80	362 40	456 43	44 22	..	943 71	2,462 56
Wellington	972 90	12 42	631 45	147 12	25 20	498 05	2,287 14
Willard	391 30	32 09	607 33	199 44	..	734 00	1,964 16
Wyman	221 95	..	84 46	38 53	..	419 42	764 36
All Schools	60 74	..	278 40	1,565 04	883 23	137 29	2,924 70
	$13,680 10	$1,806 22	$15,360 39	$4,375 70	$1,522 73	$23,737 11	$60,483 25

Plumbing Department.

Early in the spring Mr. Wm. A. Ford, Inspector of Plumbing, resigned and his resignation was accepted.

Mr. C. H. M. Hunnewell was appointed to fill the position temporarily, and after passing a very satisfactory Civil Service examination, was appointed permanently. In Mr. Hunnewell the city has secured a faithful, conscientious and competent servant. In his report to this department the following items appear :—

Number of inspections made to December 1, 1897	2,727
Number of permits issued	1,324
Number of jobs found defective or otherwise not in accordance with the requirements of the ordinance	24
Number of employing plumbers registered	14
Number of journeymen plumbers registered	10

Two plumbers have had their licenses transferred from other cities and have been registered in Cambridge, one employing and one jourueyman.

Inspection of Buildings.

With the changes made in our building ordinance during the past year the department for the inspection of buildings has been merged into that of the Superintendent of Public Buildings and this report contains the work performed in both departments.

There have been issued during the year of 1897, 670 building permits, which is 21 less than the number issued in 1896, but it is gratifying to note that the estimated cost of new buildings erected in 1897 exceeds that of 1896.

The total estimated cost of new buildings in 1897 was $2,202,-105, while that of 1896 was $1,978,080, showing an increase in 1897 of $224,025. The total estimated cost of repairs upon private buildings in 1897 was $175,545, while the same in 1896 was $237,920, showing a decrease of $62,375, in 1897. The total estimated cost of new buildings and repairs in 1897 was $2,377,650 while the same in 1896 was $2,216,000, showing a total increased cost for new buildings and repairs of $161,650 in 1897.

The following is a table showing the number of inspections made by this department and the character of alterations ordered where

the Inspector's services have been required in the interest of public safety and the proper enforcement of the building ordinance : —

Inspection of private buildings	2,896
Inspection of City buildings	856
Inspection of chimneys	561
Inspection of buildings to be moved	17
Woodwork too near flues	19
Chimneys condemned	17
Buildings in dangerous condition	11
Buildings condemned and ordered torn down	2
Chimneys plastered without inspection	31
Buildings too near line of lot	4
Defective conductors and gutters	14
Building without permits	5
Woodwork too near chimney	14
Foundations condemned	12
Party-wall condemned	1
Permits cancelled	11

The following table shows the number of permits granted in each ward for buildings, etc., and the use for which they were intended :—

Buildings.	Wards.				
	1.	2.	3.	4.	5.
Additions	41	22	14	31	26
Alterations and repairs	12	24	3	25	15
Carriage houses	4	6	9	5	12
Chimneys	1	1	2	4	1
Dwellings	40	57	3	39	81
Dwellings and stores	..	5	1	8	3
Factories	..	2	4	..	..
Foundations	5	7	2	3	14
Heating apparatus	2	8	1	5	2
Stables	3	..	7	7	9
Stores and offices	9	11	5	9	3
Storehouses	3	2	3	3	6
Miscellaneous	15	6	6	6	7
Total	135	151	60	145	179

Of the foregoing permits 641 were issued for wooden structures and 29 for brick and stone, making a total of 670.

Those of brick and stone are as follows :—

Car house	1
Dormitories	3
Dwellings	4
Dwellings and stores	9
Factories	2
Gas house	1
Hall	1
Power station	1
Railway station	1
Surgical	1
Schoolhouse	1
Stable	1
Stores	3
Total	29

Number of permits granted for each month during the years 1896 and 1897 : —

	1896.	1897.
December	57	35
January	22	33
February	16	25
March	40	62
April	91	98
May	91	58
June	82	79
July	60	62
August	67	45
September	35	57
October	66	61
November	64	55
Totals	691	670

Cost of Buildings for the Year 1897.

Months.	Ward 1.		Ward 2.		Ward 3.		Ward 4.		Ward 5.		Totals.	
	New.	Repairs.	New.	Repairs.	New.	Repairs.	New.	Repairs.	New.	Repairs.	New.	Repairs.
December	$17,000	$4,045	$22,300	$1,025	$5,650	.....	$4,900	$150	$21,400	$1,200	$71,250	$6,420
January	.....	1,700	8,150	1,150	23,400	$8,700	7,400	11,750	23,200	800	62,150	24,100
February	3,200	1,200	35,000	150	550	.....	5,850	245	9,475	300	54,075	1,895
March	51,200	2,750	70,480	3,300	2,700	1,800	16,150	750	88,400	4,350	229,030	12,950
April	180,500	4,210	73,250	2,225	12,150	950	24,600	6,050	49,050	1,025	339,550	14,460
May	198,600	9,000	11,100	1,565	9,100	7,335	15,800	610	39,175	6,375	273,775	24,885
June	44,100	4,525	60,875	600	2,100	100	48,400	2,390	42,400	895	197,875	8,510
July	13,725	7,100	31,105	7,750	7,700	350	10,100	2,050	15,875	2,780	78,405	20,030
August	232,800	600	12,900	4,275	70,000	900	850	1,500	26,200	2,225	342,750	9,500
September	15,200	4,840	28,155	5,625	300	75	100	4,685	47,850	805	91,605	16,030
October	20,100	4,450	30,515	2,450	7,850	3,300	14,100	1,925	52,925	3,250	125,490	15,375
November	258,000	1,050	150	5,450	15,000	1,630	42,700	9,260	20,300	4,000	336,150	21,390
Totals	$1,034,425	$45,470	$383,980	$35,565	$156,500	$25,140	$190,950	$41,365	$436,250	$28,005	$2,202,105	$175,545

It is a pleasure to note the interest manifested by my subordinates, their courteous deportment and faithfulness in their respective duties, ready to attend to every detail and untiring in their efforts to render to the city and its interests their best efforts in their respective positions.

I wish to extend to them my thanks and appreciation for their loyal support during the past year.

In conclusion, I desire to say that it is a pleasure to recall the cordial relations existing between the various Committees and this department, the support given me by your Honorable Body, the consideration given to subjects identified with this department, for which I desire to return my hearty appreciation and grateful acknowledgment for the kindly spirit and feeling manifested.

To the Committee on Public Property, the members of which have been ever ready to assist and advise in all matters pertaining to the work of this department, and to his Honor the Mayor, I desire to express by sincere appreciation of the valuable assistance rendered me during the past year.

Respectfully submitted,

WM. H. GRAY,

Superintendent of Public Buildings.

REPORT OF SUPERINTENDENT OF LAMPS

OFFICE OF THE SUPERINTENDENT OF LAMPS,
CAMBRIDGE, December 1, 1897.

To the Honorable the City Council: —

I have the honor to submit herewith the annual report of the Lamp department for the year ending November 30, 1897: —

The amount appropriated	$70,000 00
Balance unexpended	735 04

The principal amounts expended are as follows:—

For Arc lighting	$49,225 01
Incandescent	8,642 67
Gas	5,296 37
Welsbach lights	368 54
Care of lamps	3,684 00
Chimneys	17 55
Oil	104 10
Matches	7 02
Carriage hire	12 00
Painting lamp-posts	30 00

Expenses for electric lighting have been as follows:—

Arcs.

Amount of bills rendered	$49,410 55
Amount of deduction for outages	185 54
Amount expended for arcs	$49,225 01

Incandescents.

Amount of bills rendered	$8,692 45
Amount of deduction for outages	49 78
Amount expended for incandescents	$8,642 67

The number of hours in which one or more lamps have failed to burn is:—

	Hours
For arc lamps	4,638½
For incandescent	4,978
Total outages	9,616½

The largest number of arc lamps in use any one day	500
The largest number of incandescents in use any one day	297

The expense of gas lighting has been as follows: —

Amount expended for gas	$5,664 91
Amount paid Welsbach Company	368 54
Amount expended for care of lamps	3,404 55
Cost of gas per lamp	20 26
Cost of care per lamp	12 15
Cost of care per day	03+

Average number of gas lamps burned per day during the year, 280, consuming 5 cubic feet of gas per hour.

The average length of time each gas and oil lamp has burned per day is 9.94+ hours.

The expense of lighting with oil has been as follows: —

Amount expended for oil	$104 10
Amount expended for chimneys	17 55
Amount expended for matches	6 80
Amount expended for care of lamps	279 45
Cost of chimney per lamp	76
Cost of care per lamp	12 15

Average number of oil lamps burned during the year was 23. Thirteen hundred and fifty-eight gallons of oil have been consumed, averaging 59 gallons per lamp, at an average of 7¾ cents per gallon.

Whole number of lamps in use November 30, 1897: —

Arcs	498
Incandescents	297
Gas (Welsbach)	259
Gas (old burners)	21
Oil	23
Total	1,098

There are at this date nineteen petitions for lamps upon the files of the Lamp Committee, all of which will receive due consideration. The Committee on Lamps, together with your Superintendent have visited at night during the past year those localities where lamps were requested.

The lamp petitions can be grouped into two classes, namely, requests for lamps where there are none and requests for changes in method of lighting so as to give an increase of illumination. It is the former case that should receive the first consideration of the City Council for the ensuing year. Where there are no lights on streets, there is an absolute necessity for lamps, but where an increase of illumination is wanted, it is more or less a matter of desirability and therefore the former cases should have precedence over the latter.

The substitution of the Welsbach lights for the gas lamps and incandescent lights for the oil lamps has benefited the latter cases. This change requires the services of only four lamp-lighters in place of five formerly employed and when the change is completed in December, one lamp-lighter will be dismissed. When the lights ordered in last August are installed, which will be in December, there will be an increase of fifty-nine in the total number of lights over that of the preceding year.

The large unexpended balance shown this year is due to the delay in installing the new lights.

Electric Lights.

The contract made last year with the Cambridge Electric Light Company was renewed this year under the same terms and conditions. Under this contract the city pays $100 per year for an arc lamp of 1,200 candle power (so-called) burning 3,900 hours. The series incandescent lights of 40-candle power, burning under the same schedule as the arc lights, cost $30 each per year.

Tests of the current strength have been made at the Cambridge Electric Light Company's station at different intervals during the past year to see if the company was complying with the terms of the contract. The grand mean average of all tests showed an aver-

age current strength of 6.9 amperes, against a contract current strength of 6.8 amperes.

During the past year 27 arcs and 31 incandescents have been installed and lighted. On August 24 last 7 arcs and 53 incandescents were ordered to be installed, but owing to the failure of the Electric Light Company to receive several Brush arc-light machines, the lights have not yet been lighted. The poles, wires and fixtures are, however, all installed, and current will be furnished as soon as the dynamo ordered arrives, which will be some time in December. This will give a total of 505 arcs and 350 incandescents not including two extra arc lights on Cambridge Field lighted during the summer months. This will give an increase of 24 arcs and 85 incandescents over January 1, 1897.

A large portion of this increase is due to the substitution of incandescent lights for oil and gas lamps.

Gas Lamps.

The contract with the Cambridge Gas Light Company expired on November 15, 1894 and since that time the city has had no contract with that Company. The price paid by the city has been $1.15 net per thousand cubic feet or the same as that paid by a private consumer. The total number of gas lights on November 30, 1896 was 287 and on the same date this year was 280, of which 259 are Welsbach gas lamps. The remaining twenty-one gas lamps will be discontinued during the month of December and incandescent lights substituted.

During a portion of the months of May and June this year, there were placed three Welsbach street lights on Clinton Street as an experiment. The result of this trial was so satisfactory, that a contract was executed with the Welsbach Street Lighting Company of America for the substitution of their Keystone lanterns and Welsbach burners for previous lanterns and gas burners. These Welsbach gas lamps give an illumination of 60-candle power, with a consumption of three cubic feet per hour, against 20-candle power of the old gas lights, burning five cubic feet of gas per hour. This is an increase in illumination of 300% with a corresponding decrease

of consumption in gas of 40%. The new Keystone lanterns are, moreover, much neater in appearance and more easily cared for than the old pattern lanterns.

The following is the contract executed with the Welsbach Street Lighting Company, which I believe fully protects the city, as it is accompanied with a $5,000 bond :

THIS AGREEMENT, made and entered into this thirty-first day of August, A. D. 1897, by and between the WELSBACH STREET LIGHTING COMPANY OF AMERICA, a corporation with main offices at No. 246 North Broad Street in the city of Philadelphia and State of Pennsylvania, and hereinafter called "the Company," of the first part, and THE CITY OF CAMBRIDGE, a municipal corporation in the State of Massachusetts, and hereinafter called "the city," of the second part,

WITNESSETH: That the Company agrees to furnish such number of its Improved 60-candle power Welsbach Street Lights and fixtures and Keystone lanterns like the sample filed with the Superintendent of Lamps of said city, or, should they improve form of lantern, similar ones, the same to be satisfactory to the said Superintendent, as the city shall from time to time demand, and keep them lighted continuously between dusk and dawn daily according to time schedules to be furnished from time to time by the city, but the total number of schedule hours shall not exceed thirty-seven hundred (3,700) without extra compensation to the Company. The Company also agrees to furnish and repair at its own expense in addition to lights, fixtures and lanterns mentioned above, all other necessary materials and mantles; also furnish illuminant used in lighting, and men, residents of this city, to light, extinguish and keep the lanterns clean and also to keep the service pipes cleaned of all obstructions, all to the satisfaction of the Superintendent of Lamps of said city.

The Company covenants and agrees to indemnify and save the city harmless from any and all claims for damages by reason of any infringements of patent rights in the use of said lights, fixtures, lanterns, mantles, or any appliances connected therewith and by reason and on account of all decrees, judgments and orders of any court arising therefrom, and also to indemnify and save the city harmless from any and all suits, costs, and claims for damages for injury to persons or property caused by imperfect construction, operation, maintenance or repair of its said lights, fixtures, lanterns, mantles or appliances connected therewith upon the streets of said city, or from the negligent use, operation, or maintenance thereof.

The city agrees that it will use not less than two hundred and forty (240) of said Welsbach street lights, and if the said Company shall well and faithfully perform the conditions of this contract in all parts, first satisfying said city that no lien or other claims for labor done or materials furnished in the aforesaid work exists, and that no proceedings either in law or equity have been begun against said city either on account of any infringement of patent rights or for any other wrongful or alleged wrongful or negligent use, operation or maintenance of or injury by said lights, fixtures, lanterns, mantles or appliances, then said city shall pay to the said Company for each and every light so supplied as aforesaid and used by the city, the sum of Two Dollars and Forty-nine Cents ($2.49) per lamp for the use thereof each and every month, and the same amount pro rata for fraction of a month, and the said price paid shall be in full payment for any and all expenses attending the care, maintenance and use of such lights, whether such lights shall be of sixty-candle power or more. BUT, it is hereby understood and agreed that if through any accident or otherwise the said lights any or all fail to be lighted according to the time schedule furnished by the city hereinbefore mentioned, upon any night or nights during the continuance of this agreement, then for each and every lamp that shall so fail to be lighted there shall be deducted from the sum so paid the sum of One Cent for each and every hour that it remains unlighted, and in that proportion for any part of an hour or hours. Any amount that shall be due from the Company under the provisions of this clause of the contract shall be deducted out of any money that may be payable to it by the city.

The Company agrees to clean said lanterns at least once a week and also at such other time or times as the Superintendent of Lamps of said city may require. Any glass that may become broken or cracked shall be replaced by said Company within twenty-four hours. The Company agrees that any lamp-lighter who, in the opinion of the Superintendent of Lamps, is derelict or incompetent in the performance of his duties shall be replaced by a lamp-lighter satisfactory to said Superintendent whenever requested to do so. All lanterns, fixtures, etc., furnished by the said Company to remain the property of the said Company, PROVIDED, however, that if the city shall continue to contract yearly with said Company for a period of Ten years from the date of this contract then at the expiration of said period all of said lanterns furnished by said Company shall revert to the city without extra expense.

The City agrees to furnish all necessary posts for said lights giving free flow of gas to burner cock when the said lights are first attached. The City has the right, which reservation is agreed to by said Company, to order any change in the location of said lights, the cost of said

change to be at the expense of said city, but no lights are to be paid for except those that are actually lighted. The city agrees to furnish storage room for the present lanterns, cages, stop-cocks and burners as may be replaced by the said Welsbach lights. The removal and placing in shape of said lanterns, cages, stop-cocks, and burners to be at the expense of said Company, and to be done without unnecessary injury to said property. Any lamp-posts that may become defective shall upon written notice by the Company be replaced by the city with a sound post.

Said Company further agrees that each and every lamp-lighter employed by them shall render to the city each and every week, a true account to the best of their knowledge and belief of the number and duration of time or times for the week previous that any or all of the lights under their care have failed to be lighted.

For the purpose of making tests it is hereby understood and agreed that the city, by such person or persons as the Superintendent of Lamps may authorize, shall have access to all said lamps, lanterns, fixtures, etc., and shall have the further privilege at any time and all times of attaching to or on any of the said lights one or more measuring instruments and to maintain the same at its pleasure. The city shall also have the further right to remove at any time one or more lantern, fixture, and burner, for the purpose of testing its candle power. Any lamp that produces less than sixty-candle power shall be refurnished or replaced.

Subject to the conditions of this contract the city agrees to pay to the Company charge as aforesaid for the use of said lights, lanterns, fixtures, mantles and appliances in monthly instalments on the day fixed by the city for monthly payments of its bills. The city shall furnish to the Company, if so desired by them, with each payment a certificate of the outages deducted.

It is hereby understood and agreed that at the expiration of the time of this agreement or any time thereafter the Company shall at its own expense if requested to do so by the city remove the said lights, lanterns, fixtures and appliances and replace the lanterns, cages, stop-cocks, and burners formerly located on said posts to the satisfaction of the said Superintendent of Lamps of said city.

The said Company further agrees that within sixty days after the signing of this contract they will substitute for all the gas lamps so ordered by the Superintendent of Lamps, their Welsbach lights and Keystone lanterns and accessories as called for in this contract and they will light, extinguish, maintain, operate and repair the same as called for in this contract. If at the expiration of sixty days from the date

of signing this contract, the lights, lanterns, and accessories as called for in this contract, are not installed and in operation, then the contract shall be null and void.

The Company further agrees that, for a period of sixty days after the signing of this contract, they will, if so requested to do by the Superintendent of Lamps, light, extinguish, maintain and operate and repair all or any of the gas and oil lamps, not replaced by the Welsbach lights, at the same rate of compensation as herein provided for the Welsbach lights.

This contract shall continue to December first, 1897, and at the option of said city from month to month thereafter for a period of five months, and so on from December first of each year while contract remains in force for a period of three years from December first, 1897.

The city shall have the right at its option during said period of three years from December first, 1897, and from year to year during that period within Thirty days after the passage of the annual appropriation for the Department of Lamps to renew this contract upon said terms and conditions for a period of one year from December first next prior to any such appropriation.

Lamps to be installed and in operation Thirty days after signing contract.

IN WITNESS WHEREOF the said parties hereto set their hands and seals this Thirty-first day of August, A.D. 1897.

WELSBACH STREET LIGHTING CO. OF AMERICA,
By MARTIN MALONEY,
President. { *Seal* }

By ARTHUR E. SHAW,
Asst. to the President.

CITY OF CAMBRIDGE,
By CHARLES F. HOPEWELL,
Supt. of Lamps. { *Seal* }

Witness:
W. P. KENNEDY.

Attest:
NATHAN G. MORRELL.
Secretary.

The form of this contract is approved in triplicate.
G. A. A. PEVEY,
City Solicitor.

As above provided we hereby agree to the extension of this contract to 189 .

Witness our hands and seals this day of 189 .

Oil Lamps.

The city has maintained 23 oil lamps the past year on streets where there has been no gas supply. During the coming month, however, all of these will be replaced by incandescent lights. Incandescent lights were installed rather than the Welsbach naphtha lamps, from the fact that the naphtha lamps would require filling each day and thus necessitate an extra trip for the lamp-lighter. I believe that the time that would thus be saved could be used more advantageously in cleaning lanterns.

To the Chairman and members of the Lamp Committee, I wish to extend my thanks for the courtesy shown me the past year.

Respectfully submitted,

CHARLES F. HOPEWELL.

Superintendent of Lamps.

REPORT OF THE INSPECTOR OF WIRES

OFFICE OF THE INSPECTOR OF WIRES,
CAMBRIDGE, December 1, 1897.

To the Honorable the City Council:—

In compliance with Section 28, Chapter 27 of the ordinances of this city, I have the honor to submit herewith the annual report of the department for the Inspection of Wires. The reports upon the Fire Alarm and Police Telegraph systems are included, as the Inspector of Wires, by virtue of his office, is superintendent of these two branches of service.

Inspection of Electric Wires within Buildings.

During the past year there have been made 162 inspections of the electric light and power wiring of buildings in this city. In cases where changes were ordered, an extra visit was made to see that such orders were complied with. In many cases also, the lathers followed the electricians so closely that frequent visits were necessitated in order that all work might be inspected before it was covered in.

All new work has been inspected and made to conform to the rules of this department, which are those of the National Electrical Code. Wherever old work has been found that could be considered dangerous in any way, it has been condemned and the necessary changes made.

The total capacity of 16 c. p. lamps installed during the past year was 4,537, the total rated horse power of motors was 241½. The actual number of lamps burning at any one time is of course a small percentage of the total number installed.

There have been no fires caused by electric wires within any building in this city during the past year. There was, however,

one alarm for a fire caused by an electric light wire getting grounded through a rubber hook support to the iron framework of an awning and setting fire to it. Considerable credit should be given to the Cambridge Electric Light Company for help rendered to this department to secure good and safe wiring. Praise should also be given to several of the Cambridge electricians for their efforts to secure good wiring.

Electric Wiring in Public Buildings.

This department wired the past year the Raymond Street stables of the Street Department. It has also installed a telephone set and wired several lecture rooms and laboratories at the English High School for an experimental current derived from the Manual Training School. Whenever requested so to do, this department has cared for the bells, batteries and all other electric apparatus in the city buildings and schoolhouses. In all the above instances, however, this department has been reimbursed for both labor and material supplied to such other departments.

The coming year I should recommend that a patrol box be located in City Hall for the use of the night watchman and thus overcome the necessity of telephoning each hour of the night to Station 2. It would also be the means of furnishing communication during the day, between the day officer at City Hall and Station 2.

City Hall Electric Light Plant.

Your Inspector of Wires, at the request of Mr. Wm. H. Gray, Superintendent of Public Buildings, prepared specifications and plans for the installation of an electric light plant for City Hall. These specifications called for a direct connected 9x10 engine with a 25 K. W. dynamo and foundation, switchboard and all necessary piping. Four plans were also provided, as follows, foundation plan, piping plan and two switchboard plans. These were admirably executed by Mr. G. Stanley Whitehead of the City Engineering department. The capacity of the plant as designed was 400 sixteen candle power lamps. Switchboard arrangements were pro-

vided for in the specifications, whereby current could be obtained at pleasure from either this isolated plant or from the mains of the Cambridge Electric Light Company. The switchboard was also so wired that a storage battery adjunct could be installed in the future, without any additional expense or change. The piping allowed the exhaust steam to be used for heating the building, if so desired.

These specifications were duly advertised and bids asked for, in response to which were received 103 different bids from twenty contractors. The hightest that would be considered was $2,755, which was $245 less than the appropriation. This latter amount was amply sufficient to pay for a few changes that would be necessary in the basement so as to allow for the installation of the plant.

Failure to provide the appropriation as ordered, required the rejection of all bids. The personal judgment of your inspector is that such a plant would save money for the city beside giving a much more satisfactory lighting of City Hall.

City Hall Telephones.

In my annual report of last year, I recommended the introduction of a sub-central telephone station for the City Hall. Again this year I would recommend the same. If this system should be adopted and arrangements made with the Telephone Company, similar to that adopted in Newton, whereby the sub-central station could be maintained in the telephone exchange across the street, I believe that a further increase of efficiency would result at a less net cost. From correspondence with that Company, I have no doubt but that such an arrangement could be made. The introduction of such a system, would in the opinion of your Inspector allow several more telephones in City Hall at only a slight increase in the annual cost; moreover all would receive unlimited Boston services, which at present is not possessed by three offices. It would also give inter-communication between the different heads of departments.

Pole Inspections.

During the past summer, this department has undertaken the inspection and recording of all poles carrying electric wires within the limits of the city. Two extra men, Mr. Proctor L. Dougherty and Carroll A. Bennink, a graduate and undergraduate respectively of the Massachusetts Institute of Technology, have been employed on this work. Every pole has been numbered and indicated in its location on a large atlas and also recorded in a card index correspondingly numbered.

The record of each pole contains the following information: — Street, city number, owner, owner's number, location, grant of location, present pole set, size of pole at the butt, top and height of pole, pole occupied by, set in (cement or not), number of cross-arms, number of cables, lamp attached, special report (index), date of examination, remarks.

Each operating company has, moreover, a different color of card in the index. This record has been of constant service to this department since its completion last September. In consequence of this inspection, twenty poles belonging to the New England Telephone and Telegraph Company and twenty-eight belonging to the Cambridge Electric Light Company were condemned as being unsafe on account of decay at the butt of the pole. No pole of the West End Street Railway Company, maintained by itself or jointly with any other Company, was condemned. This shows a careful supervision of their pole lines on the part of that Company. This same careful and thorough supervision should, in the future, be given by the Electric Light Company and the Telephone Company.

It was found that the round chestnut pole resisted decay much better than did the square hard pine planed and chamfered pole, notwithstanding the fact that the latter were the most recently set. The decay was found almost invariably less than six inches beneath the surface of the ground. The sap wood, especially at the corners, was the first to decay. A crack was found also to be another prolific source of rot as it allowed the moisture to permeate the pores of the wood.

Pole Lines and Conduits.

The New England Telephone and Telegraph Company have rebuilt this year their Walden Street pole line from Massachusetts Avenue to Concord Avenue.

The First Street pole line from Thorndike Street to the First Street bridge has also been rebuilt by the above company.

The Brattle Street pole line of the Cambridge Electric Light Company has also been materially rebuilt and put in a safer condition.

On April 20, 1897, the Board of Aldermen passed the following conduit order and it was approved by his Honor the Mayor :

City of Cambridge,
In Board of Aldermen, April 20, 1897.

Ordered, That the West End Street Railway Company is hereby authorized to construct and operate a system of conduits, together with the necessary cables, manholes, distributing poles and appliances in the following streets, viz: — Boylston Street, Harvard Square, Massachusetts Avenue, Winthrop and Mt. Auburn Streets, all to be constructed and located substantially as shown by red lines on plan by A. L. Plimpton, dated March 5, 1897, and filed with the City Clerk. The authority and rights herein granted are subject to all existing ordinances and amendments thereto, and all existing and future orders of the Board of Aldermen relating to underground conduits, and to the following further conditions, viz:—

Space in each manhole, satisfactory to the Inspector of Wires is to be reserved therein for municipal wires, at least two, three-inch ducts to be reserved and maintained for such municipal wires throughout the entire length of the conduit system herein authorized, and no charge shall ever be made for the use of such ducts by the city. The right is also reserved to the city to connect from any other conduit system or distributing poles or pipes either municipal or private, to the manholes constructed by said West End Street Railway Company for the purpose of carrying the wires owned by said city, from one system of conduits or poles to any other system of conduits or poles.

Provided, however, that said Railway Company, if it so elects, may instead, build or provide other and different manholes at its own expense, for the use by the city of the ducts hereinbefore reserved for municipal wires.

The authority herein granted is also subject to the right and privilege of the city, if it shall so elect, at any time to purchase of said Company, its successors or assigns, all or any part of said conduits at a price not exceeding the original cost thereof, as certified by the President of the Company and filed with the City Clerk, to be fixed, in case the parties cannot agree, by the Chief Justice of the Superior Court at the time. In case the Chief Justice declines to serve, and in case the parties cannot agree regarding the price to be paid, it shall be fixed by three referees, one of whom shall be appointed by the Mayor, one by the said Company and the third by the two before mentioned, and by accepting the authority herein given said Company for itself, its successors and assigns, does thereby agree to sell upon the aforesaid terms to the city aforesaid.

In case of purchase as aforesaid, said Railway Company shall have the right to use said conduits by payment to said city of such rental, in case the parties cannot agree, as said Chief Justice of the Superior Court or referees may determine.

Said authority herein granted is also subject to the following conditions and stipulations, viz:—

Said West End Street Railway Company agrees, after it has dug open any street or streets for the construction, maintenance, operation and repair of said conduit system, to refill and repair said street or streets, and leave the same in a condition satisfactory to the Superintendent of Streets of said city.

Said West End Street Railway Company further agrees that the maximum difference in potential between any of the electric conductors in said conduits or between any of the electric conductors and the earth shall at no time exceed 600 volts, unless by consent of the Board of Aldermen.

Said West End Street Railway Company shall construct said conduit system to the satisfaction of the Mayor, the Superintendent of Streets and the City Engineer.

Said Company before beginning work under this order, shall give to the City of Cambridge a bond which shall be satisfactory to the Mayor, conditioned to save said city harmless from and against all claims, damages, costs and expenses arising from and in any way growing out of the construction, maintenance and operation of said conduit system including damage to private and municipal gas, water and other pipes by electricity.

Approved April 23, 1897.

A true copy.

Attest: EDWARD J. BRANDON, *City Clerk.*

This was accepted by the West End Street Railway Co. and conduits built as follows: The entire length of Boylston Street, Mt. Auburn Street from Putnam Square to Boylston Street, Winthrop Street from Boylston Street to Mt. Auburn Street, Harvard Square and Massachusetts Avenue to Cambridge Street, Peabody Street from Massachusetts Avenue to Cambridge Street. Throughout the entire conduit system there have been two ducts furnished for the city and also a separate system of manholes. These manholes are fourteen in number and are four feet square and five feet deep with an iron cover marked, "City." The city made last year a connection from the Brattle Square building to the conduits.

The Cambridge Electric Light Company has refused so far to accede to the demands of the city for the removal of five of their poles on Boylston Street, between Elliot Street and the bridge. These five poles are maintained at present simply to run wires to two arc lights, notwithstanding the fact that the company has permission to attach their wires to the telephone poles on the same side of the street. The reason given for their refusal is that it would mean an annual expense of thirty-five cents per attachment to the telephone Company's poles, a matter of $3.50 per annum on a revenue of $200 per year from the two arc lamps. As a matter of fact this amount is less than the annual interest and depreciation on the maintenance of these five poles.

The City Solicitor has been asked to render a decision as to whether the city has a right to revoke these pole locations. The claim of the Company is that their rights in respect to pole locations, are the same as those of Companies incorporated for the transmission of intelligence by electricity and that pole locations once given to them cannot be revoked. It would appear that the question may not be definitely settled without resort to the courts.

On February 23, 1897, an order was passed by your honorable body, requesting the Mayor to petition in aid of House Bill No. 518. This bill was to enable cities and towns to build, operate and maintain conduits for electrical wires in their streets. Your City Solicitor and Inspector both appeared, together with several members of the Committee on Mercantile Affairs, in behalf of that bill. Inas-

much as the city of Haverhill, which had a similar bill, decided to postpone action, it was deemed for the best interests of this city to have the bill referred to the next General Court if possible, since the Telephone Company, as usual, opposed the bill. This was assented to by the Committee on Mercantile Affairs and the bill laid over to the coming year.

If the city desires to have such a bill become a law, it should make a sufficient appropriation the coming year to meet the expenses that would become necessary to properly present the same to the Legislature, in the way of experts, etc. The time to act in the matter is at present, before our streets are filled with conduits. The present policy of allowing different companies to lay numerous conduits beneath the surface of our streets is bringing about a crowded condition, detrimental to the best interests of the city. It is also economically wrong as much as parallel railroads are wrong and does not possess the single redeeming feature of competition, which enters into the above parallel railroads.

Your Inspector knows of no reason why any citizen of Cambridge who desires telephone service should not be able to receive it. When failure to secure such service has been brought to the attention of the Inspector, the past year, he has communicated with the Telephone Company and the service was afterwards furnished.

Fire Alarm System.

Again this year must I urge the City Council to consider the matter of locating the Fire Alarm Central Station in a fire-proof building properly equipped. A continual fire hazard to the system will exist as long as the central station remains in its present quarters.

A location near the City Hall would be, in the opinion of your Superintendent, the most desirable location. Sufficient appropriation should be provided the ensuing year to allow plans to be made for such apparatus and appliances as should be provided in such a station. Unless such be done, no definite cost of the fire alarm central station apparatus can be obtained.

Last year I recommended the purchase of a storage battery plant and its substitution for our present gravity cells maintained solely for testing purposes. Lack of appropriation last year prevented such purchase. Your Superintendent hopes however, that the appropriation for the coming year will allow the installation of such a battery in place of our motor generators. Better service could be obtained and at a less annual cost to the City.

During the past year three new fire alarm boxes, numbered 157, 413 and 431, have been installed and another one numbered 148 purchased, which will be installed in December. All street boxes that have been purchased have keyless doors. Sufficient money should be provided the coming year to allow for six new boxes and the providing of ten new keyless doors for those of our present boxes located where keys are not readily accessible. The box numbers in eighteen cases have been changed the past year; this allows all numbers less than eight to be used for special signals and all duplicate numbers except box 8 have been abandoned. Also all private boxes are now numbered in the four hundreds.

The central office has had its generator table rewired and simplified and put in a better condition; also new relays of approved pattern have been substituted for the old relays. In addition, ten new keys have been put into service for testing purposes.

In November an office transmitter was purchased from the United States Fire Alarm and Police Signal Company and will shortly be put in operation. This transmitter will simplify many complications that are now attendant upon the transmitting of an alarm of fire from the central office. It is an instrument that has long been needed, but owing to the excessive cost of the previous makes could not be purchased. The introduction of this apparatus will decrease the liability for error in an alarm.

The six-inch gongs in the engine houses have been replaced by eight-inch gongs, containing an arrangement whereby a local circuit is self-actuated from each gong. These new gongs not only give a louder signal to the men, but also permit the relays, formerly used to operate the horse pulls and lights in each engine house, to be dispensed with.

Seventeen sets of magneto-generators and bells with a backboard have been purchased and installed in the engine houses and police stations; in connection with these long-distance telephone transmitters and receivers have been rented from the American Bell Telephone Co. These sets have been substituted for our formerly leased Blake instruments and are giving much greater satisfaction. Moreover the rental charge is diminished so that the difference the past year has almost paid the entire cost of generator, bells and backboards.

Last spring a complete set of plans showing the arrangements of our fire alarm and police signal systems were made. These plans were traced and blue-print copies made for each man in the department, furnishing a valuable aid to them when looking for trouble. A measurement of the plans showed that the ten box circuits contained 54.7 miles of wire, the three tapper circuits 12.9 miles, the three fire department telephone circuits 13 miles and local circuits 2.9 miles: a total of 83.5 miles of circuit wires in our fire alarm system.

The number of bell alarms for the year ending November 30, was 157 which includes seven second alarms; there were no third or general alarms. This was 55 alarms less than last year. In addition there were four still alarms and six school alarms transmitted through the central office.

I would recommend that during the ensuing year the direct current magnets in the fire alarm strikers and one whistle machine be replaced by reverse current magnets. This would obviate relays and local batteries at each striker.

Police Signal System.

Last summer a municipal register was purchased for Station 2, and is now in service, giving good satisfaction. This gives the city three municipal registers or one for each of its police signal stations. The register was necessary in order that the Station 2 system could be operated upon its present basis without infringing patent rights. The former Station 2 register now becomes a spare instrument to be used in case of a breakdown.

A municipal box movement has been purchased, thereby giving the city a spare movement in case of accident to any of those in use.

Four pole changers of an approved pattern have been purchased and installed at Station 2 in place of four short-circuiting devices formerly used on that table. The pole changers as used at present short-circuit the line at the station and then open the circuit beyond that short circuit. A more positive ringing of bells in the boxes from the station is obtained by this method.

The police patrol system contains 33.5 miles of circuit wires and the police department telephones 8.2 miles. The total amount of circuit wire owned by the city June 1, was 129.5 miles. This includes the fire alarm and police telegraph system and all local and telephone circuits cared for by this department.

For the ensuing year, I recommend the purchasing of sixty-five transmitters and receivers for our police boxes, as the present sets are not giving good satisfaction. Good telephone service with the patrol boxes is one of the most necessary essentials of the police signal system.

Your superintendent also recommends that as much circuit wire as possible in District One be placed in the conduit system recently constructed by the West End Street Railway Co.

Two new boxes, numbered 112 and 49, respectively, have been purchased from the United States Fire and Police Signal Company. The extreme simplicity of these boxes indicates that they will undoubtedly give good satisfaction.

The financial statement of this department for the past year will be found in the Auditor's report.

In closing, I wish to express my thanks to His Honor the Mayor and members of the City Council for consideration shown this department the past year.

Respectfully submitted,

CHARLES F. HOPEWELL,

Inspector of Wires.

REPORT OF THE TRUSTEES OF THE CAMBRIDGE PUBLIC LIBRARY

To the Honorable the City Council: —

The trustees of the Cambridge Public Library herewith submit their fortieth annual report, being for the year ending November 30, 1897. The librarian states that 4,357 books have been added and 2,704 have been discarded; 127 volumes, costing $426.27, have been purchased from the income of the funds in the hands of the trustees. The total number of volumes now in the library is 53,261.

The most noteworthy event of the past year has been the opening of the first branch library and reading-room, on June 28, 1897. This was provided for by a special appropriation made by the City Council and is located at 20 Second street, East Cambridge. The rooms are quiet and easily accessible, though they are not large and soon will be outgrown, since the experiment has succeeded beyond the anticipations of the trustees. The local delivery station in East Cambridge was transferred here when the branch library was established. At present the branch is open from 10 to 12, 2 to 6, and from 7 to 9, and Mr. John J. Henderson is the attendant in charge.

The circulation in all departments of the library has grown very much: 29,232 more volumes were taken out this year than last, an increase of nearly 22 per cent. By far the largest gain was in the local work, which includes the East Cambridge branch. The circulation of books at both the stations in North Cambridge has increased surprisingly, while the Huron avenue station alone shows a decided loss. The use of books on the teachers' cards in the grammar and high schools considered separately varies very much from year to year, but on the whole there has been an annual gain.

Since January 10, the reading-room has been kept open until ten o'clock every evening. This has proved a great convenience to many readers. The additional expense has been slight, and since different attendants are employed in the evening the work of the others has been better arranged.

It was found impossible to prepare the finding-list for fiction, spoken of in the last report, in time for printing this year, since all the works of fiction had to be arranged and renumbered, but the librarian expects to have it ready for the printer before summer. The monthly bulletin of recent accessions has been published regularly and has been highly praised.

The reclassification and cataloguing of the older books has gone on steadily. Nearly all the books on genealogy and American local history have been renumbered and placed in the room over the children's reading-room, where they are now accessible to students, for whose use the room has been fitted with tables and chairs.

A simple book plate, designed by Miss Haida N. Parker, one of the assistants, has been placed in all the books recently added and is being inserted in the others as rapidly as possible.

The sidewalk on the four streets about the library grounds has been paved, and now there is a brick sidewalk the whole length of Broadway so that it is possible to walk to the library comfortably even in muddy weather. The Park department has relocated the paths and greatly improved the appearance of the grounds.

Miss Grace Clark, who has been in charge of the delivery desk in the central library for the last six years, resigned on October 1; her place has been filled by promotion, and the vacancy on the staff was made good by the return from the Brookline public library of Miss Winifred B. Smith, as cataloguer and assistant. By this change the library loses the services of an experienced assistant in the circulating department and gains a much needed addition in the catalogue room. The resignation of Miss Isabel A. Jacobs after five years' service, to take effect on January 1, has also been received and accepted by the trustees.

Mr. Samuel L. Montague died in January last; he was first a member of the board, *ex officio*, when mayor in 1878 and, except during 1880, served continuously until his death, a period of eighteen years; for eight years he was elected president of the board of trustees. His practical and business training and his broad view of questions that came up for decision made him a most useful and intelligent trustee, especially as a member of the committees under whose charge the present building was erected in 1888 and enlarged in 1894. While he maintained his opinions vigorously he was always courteous and ready to yield when convinced, so that his colleagues found great pleasure in working with him and sincerely regret the loss they have sustained.

The librarian, with his assistants, deserves the thanks of the trustees and the public for endeavoring to facilitate and increase the intelligent use of the library. The report of the librarian and a statement of the receipts and expenditures are appended as a part of this report.

For the Trustees,

WILLIAM TAGGARD PIPER.

REPORT OF THE LIBRARIAN

CAMBRIDGE, Mass., November 29, 1897.

To the Trustees of the Cambridge Public Library: —

GENTLEMEN: The year now drawing to a close has been for the library a period of steady progress marked by few changes of importance. Of these the most significant has been the establishment of our first branch library, made possible by a special appropriation by the city council. It proved difficult to find in East Cambridge (the section of the city designated for the branch) a location which would fulfil the necessary requirements without calling for the expenditure of a sum in excess of our very modest estimates. The situation finally chosen, at no. 20 Second street, although somewhat farther east than we desired, has answered our purposes reasonably well except in regard to space. The present rooms are not large enough to accommodate properly all the people who frequent them; and accordingly I recommend that you consider the question of removal whenever it may be possible to obtain a more suitable location.

The branch library has been equipped with about 800 books, and 37 periodicals are at present regularly received. Many of the books were purchased for the branch, while the rest are duplicates sent from the main library. The number will be steadily increased until the full capacity of the shelves shall have been reached. The branch library has also been made one of the regular delivery stations of the central library, in place of the station which was for a long time successfully conducted at the drug-store of Mr. L. W. Reycroft. Naturally, however, the number of books delivered in East Cambridge from the main library has fallen off decidedly since the branch became available. And although the old station has

been consolidated with the new branch, I think the library facilities in this part of the city are now so good that we need not, for the present at least, consider the establishment of another delivery station such as I suggested in my report of last year.

The branch library was first opened June 28, 1897; and notwithstanding the fact that it has yet to experience the busiest part of the year, it has thoroughly proved its usefulness in advancing the work which a modern public library aims to accomplish. Mr. John J. Henderson, the attendant in charge, has given conscientious and satisfactory service.

Reading-Rooms.

The suggestion in my last report that the reading-rooms be kept open until 10 o'clock, was promptly adopted by the board of trustees, and the change went into effect January 10, 1897. Two male attendants, who come on duty at 6 P. M., alternate in giving the necessary supervision. The results of granting to the public this additional hour each day have in my opinion far more than warranted the slight increase in the cost of administration. The extra time has proved of particular value to people who find it impossible to make use of the library in the daytime.

At the request of the president of the Economy club, I now reserve, previous to each meeting of the club, a small number of books treating of the subjects chosen for discussion. These books are placed on the table in the Cambridge room, which is very well adapted to the purpose, and there they may be freely used by members of the club or by any others who desire. Assistance of this kind will be gladly rendered any group of persons pursuing a special line of study, for in no better way can the resources of the library be made useful.

Local History Room.

The increase in the number of books in this room has already made it necessary to return to the stack nearly all the general works relating to American history, which had been temporarily placed here, and but few now remain which are not included in

local history or in genealogy. Although the re-cataloguing of all the books properly belonging in these divisions has not been completed, yet much the greater part of the work has been done, and the room is now in use by the public. Constant purchases, even though not extensive ones, are made for this department, which is growing to be an attractive and important feature of the library.

Catalogue.

In my last report I recommended that a fiction catalogue be printed during the year then ensuing. It has been found impracticable to carry out this suggestion, however, partly by reason of insufficient funds, but chiefly because there was no one whose services could be spared for this work for any considerable time. Nevertheless, steady progress has been made; and this department of the library, which more than any other stood in need of a thorough overhauling, will within a few months be in a satisfactory condition.

During the past year the want of adequate assistance in the cataloguing department has been strongly emphasized. The care of new books, the classifying and re-cataloguing of the old ones, and the preparation of our monthly bulletin would alone have sufficed to tax our resources frequently, even had there been no necessity for pushing forward the work on the fiction catalogue. For the completion of this, however, we shall have, beginning in December the services of a skilled assistant, a large part of whose time will be devoted to this purpose.

Library Staff.

Miss Grace Clark, who for several years has been the efficient assistant in charge of the delivery desk, resigned her position at the beginning of October. The vacancy thus made has been filled by the appointment of Miss Winifred B. Smith, a former member of our staff and at present first assistant in the Brookline public library, who is to return here December first. By a slight re-arrangement of duties, we shall be able from the outset to employ Miss Smith chiefly in cataloguing, which is just now the department

of our work most in need of additional help. But her whole time cannot be utilized in this way until another assistant shall have been added to the force.

By direction of the library committee, an examination was given October 16, for applicants for library positions not requiring special training. Out of fourteen applicants, six passed; and of these six, two had already passed the examination given in 1896. There are now seven names on the list of eligible candidates. A copy of the last examination paper forms appendix IV of this report.

Circulation.

The statistics of circulation, which you will find in the first appendix, show a large increase since last year. In a total circulation of 162,764, a gain of 13,533 has been made at the main delivery desk; 14,994 through the local deliveries, loan libraries, and the new branch, and 705 in the schools. Total gain 29,232.

The circulation of books in the loan libraries, mentioned in my last report, has more than doubled. There has been a marked gain at the Prospect Union, which probably accounts to a greater or less degree for the falling off in the regular local deliveries through the station there situated. The only other local station showing a decrease from the figures of last year is the Huron avenue station. All the others have gained, particularly Mr. Hunnewell's, which is invariably far in advance. Mr. Whalen's station in North Cambridge, which was started toward the end of last year, has more than fulfilled our expectations by constantly circulating more books than any other station except Mr. Hunnewell's.

I would suggest that you consider the feasibility of a more systematic grading of the salaries paid the agents in charge of the local delivery stations. It seems possible that the usefulness of the stations might be extended, if it were definitely known that the compensation each year, for example, would be based upon the circulation of the year before.

Respectfully submitted,

WILLIAM L. R. GIFFORD,
Librarian.

APPENDIX I

General Statistics.

Total number of volumes in the library	53,261
Volumes added during 1897	4,357
Volumes condemned	2,704
Duplicates exchanged and sold	22
Volumes destroyed on account of contagious diseases	23
Volumes lost	26
Volumes bound	2,111
Postal cards sent for books overdue	8,315
Present number of card holders	16,862

Circulation.

	Central.	Local, including branch library.	Schools.	Total.
First Quarter	32,849	8,779	2,667	44,295
Second Quarter	30,605	9,542	2,814	42,961
Third Quarter	24,205	9,358	.....	33,563
Fourth Quarter	27,992	11,211	2,742	41,945
Total	115,651	38,890	8,223	162,764

Average per day (Central library)	377
Average per day (Local stations)	254
Average per day (Schools)	254
Largest issue (Central library) Feb. 20	850
Largest issue (Local stations) March 13	369
Largest issue (Schools) Dec. 4	582
Smallest issue (Central library) Jan. 28	87
Smallest issue (Local stations) Aug. 16	78
Teachers' books drawn directly from library	1,416

Classified Circulation.

Classes.	Biography.	Current magazines.	Fiction and juvenile.	Foreign literature.	General works.	History.	Literature.	Science and arts.	Travels.	Total.
Central library ..	4,773	3,360	78,972	2,097	1,180	4,722	10,520	6,649	3,378	115,651
Local stations and loan libraries...	1,149	229	25,464	692	397	950	1,663	1,279	1,279	33,102*
Schools.....	586	11	4,353	9	112	852	699	599	1,002	8,223
Total...	6,508	3,600	108,789	2,798	1,689	6,524	12,882	8,527	5,659	156,976*
Per cent.....	.041	.023	.693	.018	.011	.041	.082	.055	.036	..

* The circulation of the East Cambridge branch, amounting to 5,788, has not been classified and was accordingly deducted before computing this table.

School Delivery.

Name of school.	Allston.	Corlett *	Harvard.	Latin.	Morse.	Peabody.	Putnam.	Russell.*	Shepard.	Sleeper.	Taylor.	Thorndike.	Washington.	Webster.	Wellington.	Total.
Books delivered..	952	197	471	229	392	690	1354	164	380	331	437	375	902	451	898	8,223

* The delivery of books at the Corlett school ceased in June and was begun at the Russell school in October, 1897.

Local Delivery.

Stations.	Whalen.	Hunnewell.	Phillips.	Grant.	E. Cambridge.	Gove.	Dow.	Prospect Union.	Loan libraries.	E. Cambridge branch.	Total.
Books delivered...	4,215	11,247	1,737	1,860	3,059	3,027	3,030	2,130	2,797	5,788	38,890

Additions (Including Replaced Books).

Source.	City appropriation.	Citizens' Subscription fund.	Cummings fund.	Fay fund.	Gifts.	By exchange.	Total.
Books	3,932	115	6	6	291	7	4,357

APPENDIX II

Amounts Received by the Librarian and Deposited with the City Treasurer.

	Fines	Catalogues.	Duplicates.	Paper stock.	Total.
December-February	$147.12	.....	.....	$3.33	$150.45
March-May	120.51	.....	.....	4.02	124.53
June-August	110.19	$2.25	.....	2.94	115.38
September-November	138.97	1.00	$1.50	3.12	144.59
Total	$516.79	$3.25	$1.50	$13.41	$534.95

City Appropriation.

Appropriation		$19,000 00
EXPENDITURES.		
Binding	$930 71	
Books and periodicals	5,680 25	
Carrier	537 84	
Fuel	413 10	
Furniture	244 60	
Incidentals	503 83	
Insurance	288 00	
Lighting	1,332 59	
Local stations	380 83	
Printing	642 60	
Repairs	97 98	
Salaries	7,944 99	
		18,997 32
Amount unexpended		$2 68

Special Appropriation for East Cambridge Branch Library.*

Appropriation		$1,050 00
EXPENDITURES.		
Books and periodicals	$212 93	
Furniture	144 75	
Incidentals	52 63	
Lighting	40 42	
Rent	91 67	
Salaries	283 64	
		$826 04
Amount unexpended		$223 96

Funds of the Trustees.

Citizens' Subscription Fund.

Balance December 28, 1896		$152 90
Interest on bonds		220 00
Interest on deposits		1 07
		$373 97
EXPENDITURES.		
Bureau of American Republics	$5 00	
John W. Cadby	15 00	
N. R. Campbell & Co.	36 75	
T. H. Castor & Co.	7 65	
Houghton, Mifflin & Co.	25 00	
J. B. Lippincott Co.	40 00	
Little, Brown & Co.	151 47	
John A. Lowell & Co.	5 00	
Henry D. Noyes & Co.	3 00	
J. F. Olsson & Co.	4 50	
Susan T. Pratt	10 00	
Prince Society	7 00	
W. J. Rolfe	1 62	
Solomon J. Silberstein	2 50	
Society for Psychical Research	16 28	
James T. White & Co.	8 00	
Henry Willey	2 00	
		340 77
Balance on hand, December 27, 1897		$33 20

* The branch was opened to the public June 28, 1897.

Cummings Fund.

Balance, December 28, 1896	$62 60
Interest on bond	80 00
	$142 60

EXPENDITURES.

Burrows Brothers Co.	$7 00	
Bertha C. Hubbard	2 50	
W. T. Piper	2 50	
G. H. Polley & Co.	42 50	
		54 50
Balance on hand, December 27, 1897		$88 10

Fay Fund.

Balance December 28, 1896	$23 72
Interest on bond	40 00
	$63 72

EXPENDITURES.

Burrows Brothers Co.	21 00
Balance on hand, December 27, 1897	$42 72

APPENDIX III

Gifts.

	V.	P.
Agassiz, Alexander,		6
Aguilar Free Library Society, New York, N. Y.		1
Allen, Joseph H.	5	5
American Congregational Association		1
American Oriental Society	1	
Ancient and Honorable Artillery Company, Boston	1	
Atherton, Mary L., Boston	1	
Baker, Benj. F., Brookline	4	
Bartlett, John	1	
Blanchard, George R.		1
Boston, City of	1	
Boston Public Library	1	4
Boston Transit Commission	1	
Brandon, Edward J.,	2	
Brookline Public Library		1
Brooklyn (N. Y.) Library		1
Burton, C. M., Detroit, Mich.		1
Cambridge, City of	3	
Cambridge Art Circle . . . . . MSS.		
Cantabrigia Club	1	
Carnegie Library, Pittsburgh, Pa.		1
Chamberlin, *Mrs.* A. E., Boston	1	
Cogswell, E. R.	3	
Cogswell, George P.	3	
Cushing, Livingston, Boston, ... Newspapers	2	
Dallinger, Frederick W.	1	
Davis, Andrew McFarland		4
Davis, Horace	2	
Davis, Walter A., Fitchburg	1	
Davis, William M.	2	
Dimock, Susan W.	1	
Dover (N. H.) Public Library		1
Dudley, Sanford H.	6	

		V.	P.
Eaton, Percival J.			1
Eau Claire (Wis.) Public Library			2
Ela, Walter			1
Ely, Robert E.			1
Enoch Pratt Free Library, Baltimore, Md.			1
Episcopal Theological School			2
Everett Public Library			1
Field Columbian Museum, Chicago, Ill.,			7
Fiske, *Mrs.* Mary G.		1	
Fletcher Free Library, Burlington, Vt.			1
Forbes Library, Northampton			1
Foster, Francis Apthorp		41	
Fox, James A.		1	
Goodwin, William Watson		2	
Grant, John, Edinburgh		1	
Gray, *Mrs.* Asa		4	
Green, Andrew H., New York, N. Y.		1	
Green, Samuel A., Boston		1	1
Grimes, Isaac W.			1
Hall, Bordman, Boston			1
Hartford (Conn.) Public Library			1
Harvard University		2	1
Hawaii, Department of Foreign Affairs		1	
Hayes, James A., & Co., Boston			2
Higginson, Thomas Wentworth	MSS.	12	35
Hildreth, John L.			1
Hoar, George F., Worcester			1
Home Science Publishing Co., Boston		3	
Indian Rights Association, Philadelphia, Pa.			6
Irish National Federation of America, New York, N. Y.			1
James, Edmund J., Philadelphia, Pa.			2
James, William		1	
John Crerar Library, Chicago, Ill.			
Kendall, *Mrs.* Phebe M.		2	
Lancaster Town Library			1
Lane, *Mrs.* C. M.		1	
Lawrence Free Public Library			1
Leicester Public Library			1
Library Hall Association		3	
Lowell City Library			2
Lynn Public Library			1

	V.	P.
McCall, Samuel W., Washington, D. C.	5	
McCormick Harvesting Machine Co., Chicago, Ill.,	1	
McKeen, *Mrs.* H. S.		2
McKenzie, Alexander	1	
Maine Genealogical Society		1
Malden Public Library		1
Manchester (N. H.) City Library		1
Massachusetts, Commonwealth of	41	2
Massachusetts Charitable Mechanic Association, Boston		1
Massachusetts Institute of Technology, Boston		1
Metropolitan Park Commission	1	
Minneapolis (Minn.) Public Library		1
Mount Holyoke College, South Hadley		1
Museum of Comparative Zoölogy	25	
National Civil Service Reform League, N. Y.		4
New Bedford Free Public Library		1
New England Historic Genealogical Society, Boston		2
New Hampshire College, Durham, N. H.		1
New Haven (Conn.) Free Public Library		1
Newton Free Library		1
Norton Public Library	1	
Norton, Charles Eliot	1	
Oberlin (Ohio) College Library		1
Palfrey, *Miss* S. H.	Lithograph	
Parsons, *Mrs.* James H.	1	
Paterson (N. J.) Free Public Library		2
Peoria (Ill.) Public Library		1
Philadelphia (Pa.) Free Library		1
Piper, William Taggard		3
Portland (Maine) Public Library		1
Pratt, C. H. *and* F. S., Boston	1	
Pratt Institute, Brooklyn, N. Y.		2
Princeton University, Princeton, N. J.		1
Providence Athenæum, Providence, R. I.		1
Providence (R. I.) Public Library		1
Providence Record Commissioners	1	
Public Reservations, Trustees of, Boston		1
Radcliffe College	1	
Rand, E. K.		1
Redwood Library and Athenæum, Newport, R. I.		2
Reed, George B.	1	

	V.	P.
Robbins Library, Arlington		1
Robinson, Herman F.		1
Rolfe, William J.	2	
Russell, Etta Lois	1	1
St. Giles Public Library, London, England		2
St. Louis (Mo.) Mercantile Library Association		1
St. Louis (Mo.) Public Free Library		1
Salem Public Library		11
San Francisco (Cal.) Free Library		2
Scranton (Pa.) Public Library		1
Scudder, Horace E.	1	
Seattle (Wash.) Public Library		1
Silas Bronson Library, Waterbury, Conn.		2
Smiley, Albert K., Mohonk, N. Y.		1
Smith, Winifred Berry	1	
Smithsonian Institution	18	
Society for Philosophical Enquiry, Boston		1
Somerville Public Library	1	1
Southbridge Public Library		1
Springfield City Library		2
Steward, J. F.	1	
Stokes, A. P., New York, N. Y.	1	
Swan, Sarah H.	MSS.	
Syracuse (N. Y.) Central Library		1
Taunton Public Library		1
Thayer, J. B.	1	
Thomas Crane Public Library, Quincy		1
Thurston, Lorrin A.		1
Torrey, H. W., Library of	17	
Tufts Library, Weymouth		1
Tulane University, New Orleans, La.		1
United States:—		
Bureau of Education	3	
Bureau of Ethnology	4	
Civil Service Commission		1
Geological Survey	3	
Interior, Department of	7	
Interstate Commerce Commission	1	
Labor, Department of	3	
Navy, Department of	1	
Patent Office	16	
Superintendent of Documents	1	

	V.	P.
University of Pennsylvania, Philadelphia, Pa.		2
Walker, Albert H.	1	
Watertown Public Library		1
Whittier, Henry F.	1	
Whymper, E., London, Eng.	1	
Wilmington (Del.) Institute		1
Winchester Public Library		1
Winsor, Justin		2
Winthrop Public Library		1
Wisconsin State Historical Society, Madison, Wis.		1
Woburn Public Library		1
Woodman, Mary	1	
Yale University, New Haven, Conn.	2	1

Bulletins, or similar publications, have been regularly received from the following libraries:—

Boston Public Library
Brookline Public Library
Brooklyn Library
Carnegie Library of Pittsburgh
Hartford Public Library
Lawrence Free Public Library
Library Association of Portland, O.
Lowell City Library
Minneapolis Public Library
New Bedford Free Public Library
New Haven Free Public Library
New York Public Library
Paterson Free Public Library
Pratt Institute
Providence Athenæum
Providence Public Library
Salem Public Library
San Francisco Free Public Library
Scranton Public Library
Somerville Public Library
Springfield City Library
Taunton Public Library
Worcester Free Public Library.

APPENDIX IV

The following examination was given, October 16, 1897, for applicants for positions in the library:—

NOTE.— Write your name and address on the cover of your examination book. In marking the papers, attention will be given to neatness, spelling, and handwriting, as well as to the accuracy of the work.

1. What and where are the following: Honolulu; Yukon; Batavia; Punjab; Montevideo; Capri; Honduras; Santa Fé; Aspinwall; Volga?

2. What was the Georgian period in English history? the Tudor period? the Stuart period? What was the period of the second empire in France? the Bourbon period?

3. Name three questions at present under discussion which involve the relations of the United States to other nations. Name the countries concerned in each controversy.

4. Arrange the following in chronological order, giving the century in which each lived, and stating very briefly for what each is noted: La Salle; Prince Rupert; Mirabeau; Garibaldi; Sir Henry Vane; Dante; Cotton Mather; Martin Luther; Montaigne; Adam Smith.

5. Name two histories of England; two histories of the United States; one history of France; one history of Rome; one life of Washington.

6. Give the author of each of the following: Progress and poverty; Tale of a tub; Luck of Roaring Camp; Over the teacups; Alice's adventures in wonderland; The American commonwealth; Man without a country; Prue and I; Rise of the Dutch republic; Westward ho.

7. Give the titles of two works by each of the following: John Ruskin; William D. Howells; Mrs. Humphry Ward; Francis Parkman; A. Dumas, the elder; Thomas Carlyle; Rudyard Kipling; John Fiske; F. Marion Crawford; Andrew Lang.

8. Name the author and title of the work in which each of the following characters appears: Hosea Biglow; Dolly Varden; Sir John Falstaff; Lady Teazle; Achilles; Marjorie Daw; Maggie Tulliver; Tam O'Shanter; Desdemona; Meg Merrilies.

9. Name one German historian, one Greek dramatist, three American poets, one French dramatist, two English historians, one American scientist, one English essayist, and give the title of one work by each.

10. What historical period does each of the following books describe: Scott's Quentin Durward; Thackeray's Henry Esmond; Reade's Cloister and the hearth; Doyle's Micah Clarke; Bulwer-Lytton's Last of the barons?

Translation of the following passages is not required. All who are able, however, are advised to offer translation of one or both. Additional time will be allowed, if necessary, for this part of the paper.

"Le plan était beau, mais c'est une entreprise coûteuse que de vouloir prendre le cœur et l'imagination des Anglais. M. de Coulevreux les connaissait assez pour savoir qu'ils jugent volontiers du dedans par les dehors et que, pour les attirer, son collège devait avoir belle apparence. Il n'entreprenait rien à la légère; il voulut s'assurer d'abord qu'il pourrait rassembler des fonds suffisants. Il ne possédait qu'une médiocre fortune, et il abandonnait aux pauvres les deux tiers de ses revenus. Il est dur d'être riche en projets et léger d'argent; mais il avait beaucoup d'amis, il les mit à contribution. Mme. de Rins, qui passait pour ménager ses petits écus, le pria de la taxer aussi haut qu'il lui plairait: il n'eut garde de la trop charger. Il fit une tournée, se présenta chez tous les notables de la région, et, sans leur révéler ses intentions secrètes, il leur expliqua combien l'établissement qu'il voulait fonder serait profitable à la ville Hyères et les chances qu'avaient ses souscripteurs de toucher un honnête intérêt de leurs versements."—Cherbuliez. *Après fortune faite.*

"Am 5. oder 6. künftigen monats, wenn nichts besonderes dazwischen kommt, kehre ich mit seiner majestät nach Berlin zurück. Dort werden die weiteren friedensverhandlungen gepflogen werden. Auch gegen die reichsarmee tritt am 2. künftigen monats waffenstillstand ein. Gestern bei ratifikation der präliminarien hat der könig Roon und mir den schwarzen adlerorden verliehen, und was mir noch mehr freude macht, ist, dass man ihn mir in der armee allseitig zu gönnen scheint. Man sieht das den gesichtern an, wohin ich komme. Der kronprinz schickte mir heute seinen stern, obwohl ich ihn anzulegen keine veranlassung habe, da wir stets nur den überrock tragen. Gestern hat der könig sich mit seiner umgebung in der schlacht zu pferde photographiren lassen, der rappe kommt also auch auf das bild; er stand exemplarisch ruhig.

Allerdings haben wir die cholera in der armee, aber doch nicht eigentlich epidemisch. Am 1. künftigen monats setzt sich die armee nach Böhmen in marsch und bezieht ausgedehnte quartiere, so dass hoffentlich der gesundheitszustand sich bessern wird."—Moltke. *Briefe.*

REPORT OF THE COMMISSIONER ON HARVARD, WEST BOSTON, CRAIGIE'S AND PRISON POINT BRIDGES

To the Honorable the City Council of the City of Cambridge: —

The Commissioner for West Boston, Craigie's, Prison Point, and Harvard Bridges submits for himself and associate the twenty-seventh annual report of the matters pertaining to West Boston and Craigie's Bridges; the twenty-first annual report on Prison Point Bridge, and sixth annual report on Harvard Bridge.

Harvard Bridge.

Harvard Bridge is in good condition. Sheathing the roadway has just been completed. Plank, three feet wide from the curbing on each side of the bridge, for bicycles, was laid lengthwise. This was done at the request of the bicycle riders. The other sheathing was laid diagonally. We get good wear for about nine months, then have to repair. When taking up the old sheathing plank last year about thirteen thousand feet of the best of it was saved for patching, making quite a saving. When sheathing the roadway this year about the same quantity was saved for use in a similar way next year.

The cost of sheathing the roadway was $2,795.00, Boston paying one half.

The whole length of the iron fence on each side of the bridge has been painted. The iron work outside the rail has been scraped and painted, and the house on the draw pier has been painted.

The West End Street Railway Company relaid their tracks on the bridge at the time the sheathing was done, putting in new rails

where necessary. The sheathing between the rails and between the tracks was renewed with new plank, making a much better road than the old one. The West End Street Railway Company has always promptly responded to all requests for needed repairs or alterations.

Ordinary repairs on the bridge are made by draw-tender and his assistants. They also clean the surface of the bridge weekly, remove the snow from the sidewalk and keep the electric light globes clean and in order.

West Boston Bridge.

This bridge is in the same condition as last year. By watching it closely and making the necessary repairs promptly, it is kept in good condition for travel. It is a constant care. We hope the time is not far distant when the cities of Boston and Cambridge, with the co-operation of the projected elevated railroad company, will see their way clear to build a new bridge of stone and iron not less than one hundred feet wide.

The paving has been repaired on both sides of the roadway the entire length of the bridge. The roof of the engine house has been stripped of the shingles that were badly decayed, and a tin roof substituted, making it much safer against taking fire from sparks which are freely showered upon it from the smoke-stacks o tugs while lying there.

The engine house, sheds and iron work have been painted.

The bridge has been swept once a week, always after midnight, and watered three times daily with salt water in dusty weather.

Sweeping piers and draw, cleaning snow from draw piers and sidewalks, and ordinary repairs have been made by the draw-tender and his assistants. The draw has been sheathed when necessary.

The West End Street Railway Company relaid their tracks the whole length of the bridge, it being necessary to do so on account of the settling of the pavement and the generally poor condition of the bridge.

Craigie's Bridge.

A new sidewalk has been built on the south side of the bridge, for the whole length of the Cambridge end, and a new road-way has been laid for the same distance between the sidewalk and the track. One hundred and twenty-five feet of new sidewalk has been built on the north side at the Boston end. New timbers were put under the draw to hold it in place. The work was done at night so as not to stop travel.

The pavement on the north side of the bridge for its whole length, has been repaired. The following repairs have been made on the draw-tender's house: —new gutters on piazza, new tinning on ell, two chimneys retopped, two coats of paint put on house. Engine house and iron work on pier, and new fence have been painted, and two chimneys retopped on the house at the Cambridge end of bridge.

The bridge is swept once a week, always after midnight, and the roadway is watered with salt water three times daily when necessary to lay the dust. The ordinary repairs and sweeping sidewalks and piers have been done by the drawtender and assistants, draw sheathed when necessary.

Next year the sidewalk on the north side at the Cambridge end will have to be rebuilt, next year a new fence built and the roadway paved. The sidewalks on the south side Boston end will have to be repaired and a new fence built. A part of the piles at the Cambridge end have been in place about one hundred years. They have to be looked after very closely to prevent accidents.

Prison Point Bridge.

This bridge is in very bad condition. The draw which is of the old-fashioned flap pattern, is in such condition that it is almost impossible to raise it. It would require a considerable outlay to make it work easily, but your commissioner does not think it advisable to expend much money on it, as it is expected that the Boston and Maine Railroad will begin the work of separating the grades of the road and railroad at this point next year, and the plan for so doing

provides for a new highway bridge over the channel. The draw-tender's house has been painted outside, and two chimneys re-topped. The bridge and draw have been sheathed. Ordinary small repairs have been made and sweeping done by the draw-tenders and assistant.

In General.

The usual statement is appended showing the number of draw openings and the number of vessels which passed through, also table showing the traffic over the bridges on September 29, 1897.

The amount of revenue received for rents, dockage, repairs to the West End Street Railway Company's tracks, etc., during the year has been $1,593.48, one-half of which, $796.74, has been paid to each city.

Respectfully submitted,

WILLIAM J. MARVIN,

Bridge Commissioner for Cambridge, and Harbor Master on Charles and Miller's Rivers and Broad Canal.

December 15, 1897.

Statement Showing Traffic over Bridges.

Date, 1897.	Bridge.	Teams.	Horses.	Pedestrians.	Bicycles.	Electric Cars.	Car Passengers.
Sept. 29, 6 A.M. to 7 P.M.	Harvard.....	2,966	3,787	3,095	3,024	798	20,230
	West Boston.	3,689	5,011	9,506	305	1,058	21,286
	Craigie's.....	7,349	10,532	9,266	228	725	15,333
	Prison Point..	2,590	4,003	2,567	140	....	.....
		16,594	23,333	24,434	3,697	2,581	56,849

Number of Times the Draws on Craigie, Harvard, Prison Point and West Boston Bridges have been opened, and the Number of Vessels which have passed through for the year beginning Dec. 1, 1896, and ending Nov. 30, 1897.

Date.	Craigie's.		Harvard.		Prison Point.		West Boston.	
Dec. 1, 1896, to Nov. 30, 1897.	Number of Draw Openings.	Number of Vessels Passed Through.	Number of Draw Openings.	Number of Vessels Passed Through.	Number of Draw Openings.	Number of Vessels Passed Through.	Number of Draw Openings.	Number of Vessels Passed Through.
1896.								
Dec.....	281	362	144	155	37	51	109	171
1897.								
Jan.....	186	237	36	38	15	22	33	51
Feb.....	98	132	6	7	19	27	8	13
March ..	138	180	29	30	29	41	28	39
April....	263	401	121	156	58	90	94	172
May.....	371	489	170	198	57	82	144	228
June....	393	525	268	323	35	48	197	305
July	320	421	235	274	59	90	205	299
Aug.....	422	561	218	278	62	80	219	331
Sept.....	482	521	226	239	29	48	231	313
Oct.....	316	439	210	219	30	48	184	272
Nov.....	259	366	147	154	49	74	146	224
	3,529	4,634	1,810	2,071	479	701	1,598	2,418

CITY CLERK'S REPORT OF FEES AND LICENSES

OFFICE OF THE CITY CLERK, December 9, 1897.

To the Honorable the City Council of the City of Cambridge: —

The undersigned herewith presents an account of the sums received for fees and licenses during the year ending November 30, 1897.

Auctioneers' Licenses	$50 00
Pool, Bowling Alley and Billiard Licenses	86 00
Wagon and Carriage Licenses	245 00
Intelligence Office Licenses	32 00
Junk Stores and Collectors' Licenses	310 00
Pawnbrokers' Licenses	50 00
Recording Mortgages, Assignments, etc.,	592 75
Marriage Certificates	495 00
Certified Copies from Records	81 50
Fees from Dog Licenses	407 60
Fees from Liquor Licenses	50 00
Fees from Fireworks Licenses	101 00
Minors' Licenses and Sundries	68 05
Total	$2,568 90

The foregoing amount has been paid into the City Treasury.

The receipts from Dog Licenses have been $4,890.00. Of this amount the City Clerk's fee (20 cents for each license issued), amounting to the sum of $407.60, is included in the above list of fees, and the balance, amounting to $4,482.40, has been paid to the County Treasurer.

Respectfully submitted,

EDWARD J. BRANDON,
City Clerk.

REPORT OF THE CITY MESSENGER

OFFICE OF THE CITY MESSENGER, December 1, 1897.

To the Honorable the City Council: —

GENTLEMEN: — In compliance with the Ordinance relating to the purchase and delivery of stationery, the City Messenger has the honor to submit his annual report: —

Stock of stationery on hand, Dec. 1, 1896	$327 15
Purchased during the year	1,043 00
	$1,370 15

Delivered to heads of departments as follows: —

Street Department	$57 33
City Clerk's Department	126 73
Engineering Department	35 79
Clerk of Committees' Department	117 04
Auditor's Department	57 71
City Messenger's Department	154 23
Treasurer's Department	36 34
Police Department	55 82
Lamp Department	10 85
Assessors' Department	85 15
Fire Department	2 89
Inspector of Milk Department	14 00
Superintendent Public Buildings' Department	31 93
State Aid Agent Department	9 10
Inspector of Wires Department	6 41
Law Department	65 69
Amount carried forward	$867 01

Amount brought forward	$867 01
Executive Department	62 50
Election Expenses	53 88
Sealer of Weights and Measures	7 40
Registrars of Voters	2 89
Park Department	50 55
City Physician	4 25
Sewer Department	7 51
Stock of stationery on hand, December 1, 1897	314 16
	$1,370 15

Respectfully submitted,

FRANCIS L. PRATT,

City Messenger.

REPORT OF THE SEALER OF WEIGHTS AND MEASURES

OFFICE OF THE SEALER OF WEIGHTS AND MEASURES,

CAMBRIDGE, December 1, 1897.

To the Honorable the City Council: —

I have the honor of submitting to you the annual report of the Department of Weights and Measures.

Amount of appropriation		$1,619 73
Amount of revenue received	$551 08	
EXPENDED.		
For Salaries:—		
Sealer, A. F. Roberts	$1,000 00	
Assistant, C. D. Kinnear	162 50	
Board of horse and care of wagons and harnesses	300 00	
Repairs on and painting wagons:—		
Gerry & Rufer	16 75	
Charles Waugh	10 00	
Horse-shoeing, Gerry & Rufer	18 00	
Stamps and burning brands, Jas. Ryan	6 30	
Car-tickets, West End Railway Co.	10 00	
Advertising annual notices, Cambridge Chronicle Co.	63	
Hardware (nails, etc.), Jas. M. Price & Son	2 71	
Stationery, postage stamps, etc., messenger	7 40	
Moving electric pole, Cambridge Electric Light Co.	6 00	
1,000 Letter-heads and printing, J. S. Nightingale	6 25	
Amounts carried forward	$1,546 54	$1,619 73

Amounts brought forward	$1,546 54	$1,619 73
Lumber for city scales, Geo. W. Gale . .	2 11	
Books of certificates, Lombard & Caustic .	7 00	
Edward I. Train, one half weighing fees .	59 01	
Thomas Gurnham, one half weighing fees .	5 07	
		$1,619 73

Whole number of scales, weights and measures inspected	37,243
Whole number of scales, weights and measures condemned	9 14
Whole number sealed	36,329

Number of scales found incorrect and adjusted	67
Number of weights found incorrect and adjusted . . .	95
Number of dry measures found incorrect and adjusted .	153
Number of wet measures found incorrect and adjusted .	65
Number of milk cans found incorrect and adjusted . .	476
Total	856

Number of scales condemned	10
Number of weights condemned	25
Number of dry measures condemned	27
Number of wet measures condemned	15
Number of milk cans and bottles condemned	837
Total	914

There is no new thing in connection with this department to report at this time.

The old matter of licensing of all hawkers and peddlers who desire to do business on the streets of Cambridge is again brought into this report.

The time has arrived when our citizens who earn their living as hawkers and peddlers are ready (for their own protection) to pay a good price for this privilege, and to this end are anxious to see an ordinance passed by your Honorable Body which will protect them against a disreputable set who come from other cities and towns (where they are obliged to have a license) and in order to compete with this element some have resorted to the same means of defraud-

ing by the use of false weights and measures, and this gives double the amount of work for the sealer, which makes it impossible for him to properly follow up this particular branch of work of the department.

If such an ordinance could be passed, not only would our business men, but the citizens at large, and especially the ladies and housewives who purchase fruit and vegetables at their doors be protected against the fraud and deception so often practiced upon them.

I again strongly recommend that for the better protection of the citizens of Cambridge an ordinance be passed making it obligatory upon all persons who wish to do business upon our streets as hawkers and peddlers of any kind to procure a license from the City Clerk for which they shall pay a reasonable sum, and in violation of which they shall be arrested and fined in such a sum as may by ordinance be specified.

I have been obliged to arrest and bring to justice some who have persisted in using false weights and measures, which has had a tendency to check in a great measure this nefarious business.

I am very grateful to his Honor the Mayor for the assistance he has rendered me during the year.

Respectfully submitted,

ALBERT F. ROBERTS.

Sealer of Weights and Measures.

REPORT OF THE COMMITTEE ON SOLDIERS' AID

The Committee on Soldiers' Aid submits to the City Council its report for the year ending November 30, 1897: —

The amount paid as regular State Aid was	$12,701 50
The amount paid to indigent soldiers and sailors was	1,448 00
The amount paid as soldiers' relief was	6,267 00
The amount paid for the burial of deceased indigent or friendless soldiers or sailors was	490 00
The amount paid to the clerk and agent employed in the examination of settlements, etc., was	900 00
Printing and stationery	72 30
Aid by cities and towns	156 80
Board and care of sundry persons	1,167 60
Car tickets and carriage hire	17 76
Fuel	157 40
Sundry supplies	103 75
Typewriting	9 25
Total	$23,491 36
The amount received from the Commonwealth was	$13,715 37
The amount received from other towns and cities was	238 12
For sundry authorized payments which were not paid	207 01
	$14,160 50

There are now upon the State Aid list 264 persons, and upon the list of indigent soldiers and sailors 12. The number of persons upon the soldiers' relief list is 88.

All of which is respectfully submitted.

CHARLES P. KEITH,
JAMES A. WOOD,
WALTER C. WARDWELL,
JOHN L. ODIORNE,
Committee on Soldiers' Aid.

REPORT OF THE TRUSTEES OF THE DOWSE INSTITUTE

CAMBRIDGE, December 18, 1897.

To the Honorable the City Council:—

The Board of Trustees of the Dowse Institute respectfully reports that a course of seven lectures, with one concert, was given in Union Hall, Cambridgeport, beginning November 24, 1896, and ending January 11, 1897.

An attested copy of the accounts of the Treasurer is herewith transmitted, showing the amount of receipts and expenditures.

FRANK A. ALLEN,
W. A. BULLARD,
GEO. HOWLAND COX,
} *Board of Trustees.*

W. A. BULLARD, Treasurer, in account with

Dr.

1896.	To Balance	$31 84
	City of Cambridge for one year's Interest on fund	600 00
	Tickets to course of entertainments	394 50
	Union Hall Association, stock	125 00
		$1,151 34

DOWSE INSTITUTE.

			Cr.
1896.			
Nov. 24.	By	Boston Star Orchestra Association, Concert	$182 00
Dec. 1.		R. L. Cumnock, Lecture	75 00
" 8.		Louis C. Elson, "	75 00
" 15.		J. B. Pond "	100 00
" 22.		Charles E. Fay "	60 00
" 29.		Robert Harper "	75 00
1897.			
Jan. 5.		W. J. Clarke "	60 00
" 11.		John B. DeMott "	100 00
		Stamped envelopes addressed	22 70
		John H. Ford, printing	11 00
		Cambridge Co-operative Asso. printing	51 25
		Cambridge Tribune, advertising	10 00
		Cambridge Chronicle "	10 00
		Cambridge Press "	10 00
		F. M. Buffum, distributing circulars	14 50
		Geo. E. French, " "	1 28
		F. L. Beunke, " "	1 80
		T. W. Dardis, " "	2 00
		H. H. Dyer, ticket seller	8 00
		F. M. Buffum, door keeper	8 00
		Albert F. Buffum, "	8 00
		Union Hall Association	265 00
		Balance	81
			$1,151 34

ATTEST: W. A. BULLARD, *Treasurer.*

REPORT OF THE TRUSTEES OF THE BRIDGE CHARITABLE FUND

To the Honorable City Council: —

This Board respectfully submits its twenty-first annual report:

The amount on deposit at the Cambridgeport Savings Bank to the credit of this fund as of July 18, 1897, was	$3,370 37
Interest added semi-annually to July 18, 1897	136 24
	$3,506 61

By the terms of the deed of gift of Levi Bridge, two-thirds of the interest accumulations of the fund beyond the sum of $2,000 are due and payable to the Overseers of the Poor. They have heretofore claimed only the sum of $275, and about $800 is now due to them and subject to their call. They have preferred to allow their portion of interest accumulations to remain with the original fund until sufficiently large to be used for the purpose of its founder. As the amount due the Overseers of the Poor is now so large, it would seem advisable that it should be withdrawn, and that hereafter the annual indebtedness to their department from this source, should be paid at the close of the financial year. The fund is now steadily increasing year by year, and at no distant date it will afford material aid to the poor of Cambridge.

ALVIN F. SORTWELL,
JOHN R. FAIRBAIRN,
JOHN L. ODIORNE,
} *Trustees of the Bridge Charitable Fund.*

REPORT OF THE TRUSTEES OF THE SANDERS TEMPERANCE FUND

To the Honorable City Council:—

The Board of Trustees of the before mentioned fund respectfully submits the thirty-second annual report concerning said fund since its establishment.

The Board has continued in service the Missionary appointed in the year 1896, Mr. James Hicks, and he has endeavored to the best of his ability to fulfill the conditions imposed under the provisions of the Sanders bequest.

He has attended the sessions of the District Court and sought there and elsewhere the acquaintance of the unfortunate victims of the liquor habit, endeavoring always to lift them up and strengthen them. His report of work done during the year is hereto appended.

The amount of the fund, viz., the sum of $10,000.00, remains as heretofore in charge of the City Treasurer..

ALVIN F. SORTWELL,
JOHN R. FAIRBAIRN,
JOHN L. ODIORNE.
} *Trustees of Sanders Temperance Fund.*

CAMBRIDGEPORT, December 28, 1897.

To the Trustees of the Sanders Temperance Fund:—

GENTLEMEN:—I submit to you my annual report, and feel deeply grateful for the many blessings bestowed upon my humble efforts, as I have labored to advance the cause of total abstinence in our c ty. Very many men, who in the years of the past have been bound by the strong chains of intemperance, are to-day rejoicing in their freedom and working not only for the happiness and comfort of their own homes, but for the benefit and salvation of others who are held by the same chains in bondage to the drink habit.

During the year I have entered the homes of 1874 families where drink is more or less used. Sometimes I have conversed with the drunken husband, who in his sober moments, seemed to realize the enormity of his offence against God, his family and the community. Sometimes the weeping wife and almost starving children would greet me, "Oh, help my husband to become a sober man." This has been my work from day to day, and I am much pleased to say that the God of all blessing has signally given my efforts His approval. Men have been saved and homes made happy.

During the year I have been present and assisted in carrying on 118 Public Temperance meetings in the city. At each of these meetings the pledge of total abstinence is offered, and the drinking part of the audience especially urged to sign the same. Over 400 persons have signed the pledge at these meetings during the year.

I have visited the House of Correction on Sunday mornings since the appointment of a regular chaplain, and done what I could to assist in the service for the prisoners. On the second Sunday morning in each month, I talk with the women prisoners in their dining hall. They seem much interested. I have collected large quantities of reading matter for the prisoners.

I visit prisoners every week, who are confined for drunkenness and whose terms are short, administer the pledge and in many cases I am enabled to do them good after their release.

I have been in daily attendance at the sessions of the District Court, and through the courtesy and kindness of the Court have been instrumental in helping many an unfortunate in his endeavor to change his course of life.

Very respectfully yours,

JAMES HICKS,

Agent Sanders Temperance Fund.

REPORT OF THE CHIEF OF POLICE

To His Honor the Mayor, and the City Council of the City of Cambridge:—

GENTLEMEN: — In compliance with the City Ordinance, I have the honor to present my annual report of the work of the Police Department for the year ending November 30, 1897.

The whole number of arrests for the year has been three thousand three hundred and seventy-five (3,375) against two thousand, nine hundred and ninety-seven (2,997) last year, an increase of three hundred and seventy-eight (378).

Males	3,160
Females	215
Adults	2,717
Minors	658

The offences for which arrests have been made are as follows:—

Adultery	5
Assault and battery	185
Abortion	2
Assault, felonious	4
Assault on officer	5
Assault, indecent	5
Assault with intent to rape	1
Attempt to commit larceny	1
Arson	2
Assault, mutual	3
Attempt to break and enter	3
Bastardy	18
Breaking and entering	46
Being present where gaming implements were found	2
Beating boarding-house	1

Bigamy	1
Capias	16
Common drunkard	8
Contempt of Court	5
Concealing mortgaged property	3
Cruelty to animals	7
Delirium tremens	3
Default warrant	3
Disturbing the peace	315
Disturbing public meeting	2
Disorderly house	1
Disturbance of street car	38
Drunkenness	1,902
Embezzlement	19
Escaped prisoners	4
Evading car fare	5
Exposure of person	7
Forgery	4
Fornication	2
False pretences	3
Gaming, or present at	18
Idle and disorderly	6
Incest	2
Insane	19
Illegal transportation	8
Illegal sale of liquor	4
Keeping dangerous dog	1
Keeping unlicensed dog	4
Keeping liquor with intent to sell	2
Liquor nuisance	30
Larceny	188
Larceny from building	7
Larceny from person	4
Loitering on sidewalk	4
Manslaughter	1
Malicious mischief	28
Murder	1
Non-support	48
Neglected children	7
Obtaining money by false pretence	4
Obstructing an officer	1
Obstructing street car	2

Operating steam boiler without right		4
Promoting a lottery		1
Peddling without a license		5
Playing cards on the Lord's day		1
Playing ball on the Lord's day		13
Riding bicycle on the sidewalk		28
Receiving stolen goods		3
Robbery		3
Rape		3
Refusing to assist an officer		2
Safe keeping		11
Stubborn children		15
Stealing a ride		3
Sodomy		1
Surety of the peace		1
Suspicious persons		4
Selling cigarettes to a minor		1
Tramps		1
Threatening		1
Truants		7
Trespass		10
Vagrants		20
Violating city ordinance		109
Violation of milk law		7
Violation of building law		1
Violating order of Board of Health		3
Walking on R. R. track		97
Whole number of lodgers		395
Males	392	
Females	3	
Adults	380	
Minors	15	
White	386	
Colored	9	

Nativity of Prisoners.

United States	1,808
Ireland	921
British Provinces	303
England	93
Sweden	65
Scotland	58

Germany	25
Italy	20
Portugal	16
Russia	13
France	10
Poland	9
Arabia	6
West Indies	4
Hungary	3
South America	3
Egypt	3
Greek	2
Finland	2
China	2
Norway	2
Cuba	1
Spain	1
Africa	1
Austria	1
Switzerland	1
Denmark	1
Wales	1

Miscellaneous Business.

Accidents	109
Buildings found open and secured	360
Cases investigated	1,222
Dangerous buildings	1
Dead bodies found	3
Defective gas pipes	19
Defective water pipes	64
Defective hydrants	3
Defective lamps	1,785
Defective wires	20
Defective streets and sidewalks	1,099
Disturbances suppressed	194
Dogs killed	39
Fire alarms given	17
Fires extinguished without alarm	12
Intoxicated persons assisted home	2
Lost children restored	275
Runaway teams caught	3

Sick and injured persons assisted	40
Stray teams put up	54
Street obstructions removed	16
Streets made safe	20
Water running to waste	25
Amount of property reported stolen	$7,427 96
Amount of property recovered	5,843 50

City Property in Use by Police Department.

115 badges, new	101 80
104 badges, old	50 00
87 belts and billies	108 00
8 books	26 00
3 bookcases	20 00
8 bedsteads	40 00
Bedding and blankets	40 00
1 buggy	275 00
2 bureaus	3 00
8 clocks	25 00
80 chairs	100 00
1 carpet	20 00
2 copying machines	20 00
200 copies of police rules	40 00
11 desks	125 00
1 easy chair, matron's	10 00
4 flags	60 00
5 horses	500 00
6 harnesses	120 00
5 horse blankets	15 00
4 halters	1 00
1 hat rack	50
6 ink-stands	3 00
36 lanterns	27 00
1 lounge	5 00
8 mirrors	14 00
3 maps	15 00
10 mats	20 00
9 pairs of handcuffs	27 00
1 police van	300 00
1 ambulance	400 00
3 police signal systems	12,000 00
Amount carried forward	$14,511 30

Amount brought forward	$14,511 30
3 patrol wagons	1,000 00
93 revolvers	450 00
Ropes and stakes	10 00
3 robes, carriage	20 00
1 rogues' gallery	150 00
3 saddles and bridles	12 00
2 safes	200 10
95 short billies	42 50
8 spittoons	2 00
1 sleigh	25 00
1 stove	8 00
2 straps and weights	1 00
4 stretchers	6 00
1 telephone line	300 00
3 thermometers	1 50
6 tables	24 00
40 tin dippers	9 00
25 towels	4 00
1 typewriter	140 00
2 umbrella stands	2 00
1 wagon van, old	25 00
5 waste baskets	1 00
4 water coolers	30 00
1 wardrobe	10 00
6 water pails	1 00
2 wagon jacks	2 00
Operating table and chair	37 50
Miscellaneous	10 00
	$17,034 90

Signal Systems.

In the three signal districts during the past year there have been : —

Duty calls by officers	344,292
Telephone calls by officers	16,828
Wagon calls	1,776
Miles run	$2,809\frac{58}{100}$
To fires	36
Sick and injured persons carried to hospital	12
Sick and injured persons carried home	21
Other runs	110

Expenditures.

Boarding horses	$471 66
Buttons	25 00
Buggy, new	275 00
Boston Ice Co.	12 00
Bicycles for department	120 00
Billies	20 00
Cambridge Gas Light Co.	977 37
Cambridge Electric Light Co.	60 04
Cleaning stations	227 40
Cloth for department	352 00
Directories for department	18 00
Diaries for department	80 48
Expressing	8 35
Fresh Pond Ice Co.	24 56
Feeding prisoners	54 43
Gas Consumers' Association	24 50
Hay and grain	384 27
Handcuffs	7 13
Horse hire	94 00
Hat numbers	36 42
Medical attendance	18 00
Medicines	10 05
New England Telephone and Telegraph Co.	397 65
Photographs for rogues' gallery	24 00
Printing	239 07
Policemen, services of	100,153 41
Repairs on wagons	134 70
Repairs on harnesses	42 26
Repairs on revolvers	9 30
Repairs on wagon house	35 01
Salary of Chief of Police	1,800 00
Salary of Deputy Chief of Police	875 00
Salary of Captains and Inspector	5,716 66
Shoeing horses	141 50
Supplies for stations	395 17
Travelling expenses	86 03
West End Street R. R. Co. (tickets)	200 00
Total cost of the department for the year	$113,550 42
Appropriation	113,000 00
Cost of department over appropriation	$550 42

Expenditures	$113,550 42
Receipts	7,043 90
Balance showing actual cost	$106,506 52

The Force.

The organization of the force consists of a chief, deputy chief, three captains, one chief inspector with the rank of captain, seven sergeants, eighty-four patrolmen, four drivers of patrol wagons, two drivers of ambulance and two matrons.

One sergeant and twenty-two patrolmen are on duty in the daytime; one sergeant at the Public Library; one patrolman is stationed in the City Hall, one detailed as clerk at Police Headquarters, one detailed to assist the City Solicitor, one in Police Station 4, and eighteen for street duty.

During the night time six sergeants and sixty-four patrolmen are on duty; one as house officer in Station 4, two in the wagon houses and sixty-one on street duty divided into two reliefs.

Changes.

During the year the office of deputy chief of police has been created and Sergeant William F. Batchelder promoted to that position.

No-License Law.

A constant effort has been made during the year to suppress the illegal sales of intoxicating liquor with very gratifying results.

Thirty search warrants have been obtained from the court; in these cases liquor was found in twenty-four places and convictions followed.

Eight arrests have been made for illegal transportation and five convictions.

Complaints have been made against six druggists for illegal sales of liquor and five convicted.

Ambulance.

The ambulance was placed in charge of this department in December, 1896 ; since that time it has been called to one hundred and eighty-nine accidents, sixty-two removals for the Overseers of the Poor Department. Previous to the change in the ordinance twenty-eight removals were made for private parties.

Matrons.

There have been two hundred and fifteen (215) females arrested during the past year, against two hundred and one (201) last year, all of whom were placed in charge of the matrons.

Uniform Cloth for the Department.

There has been purchased during the year cloth for the department to the amount of $352 ; the money received for the same has been paid to the City Treasurer.

There is cloth on hand to the value of $100.

Recommendations.

I would renow my recommendation that the cell-room in Police Station 2 be remodeled by taking out the brick cells and placing in their stead improved iron cages, thereby giving seven additional cells, which are very much needed, as it is often necessary to put more than one prisoner in a cell at a time for want of room. This change will give much better light and ventilation as well as additional cells.

Conclusion.

In concluding this report I desire to extend my thanks to His Honor the Mayor, the members of the City Council, and all others who have given me their advice and assistance.

LOTHROP J. CLOYES,
Chief of Police.

ANNUAL REPORT OF THE CHIEF ENGINEER OF THE FIRE DEPARTMENT

Chief Engineer's Office, City Hall.
Cambridge, Mass., December 22, 1897.

To His Honor the Mayor and the City Council : —

Gentlemen : — In accordance with Section 6 of the Ordinance in relation to the Fire Department, I herewith respectfully submit my nineteenth annual report, which contains a statement showing the condition of this department, and also a record of fires which occurred during the year beginning December 1, 1896, and ending November 30, 1897, with the amount of loss and insurance as far as ascertained.

The names and ages of the members are also given with the rank of each.

Manual Force.

The manual force, at the present time, consists of one hundred and twenty-four officers and men, comprising twelve companies, viz : seven steamer, two chemical engine and three ladder companies.

Forty-six men are permanently employed and seventy-eight are call men. There are two vacancies in the call force.

Apparatus.

The apparatus connected with the service has received such repairs during the year as were found necessary in order that it might be at all times in a condition for immediate use, and at present all the apparatus is in good condition, as are also all the appendages connected with them.

Chemical Engine No. 1 was furnished with a new set of wheels, and its other parts thoroughly repaired, which, with the usual amount of repairs to other apparatus, caused by accident or general wear, have not proved very extraordinary.

Hose.

During the year 550 feet of two-and-one-half-inch cotton rubber-lined hose was purchased to replace that which was worn out and condemned.

The department has at present in serviceable condition, 13,550 feet in use by the several engine companies. There is also 700 feet of one-inch rubber and 250 feet of two-inch cotton and linen hose for use on chemical engines.

Hydrants.

The total number of hydrants now available for fire purposes is 933.

Horses.

But one horse was disposed of during the year, and that because of his having become broken-winded, which rendered him unfit for the service. There are at the present time in the service of the department thirty-five horses, and with few exceptions are in good condition and well suited for the service.

Appropriation and Expenditures.

The amount of appropriation for the maintenance of this department for the fiscal year ending November 30, was $80,500.00. The receipts were $214.73.

The principal items of expenditures were as follows: —

Apparatus and repairs of	$1,976 50
Bedding and furniture	280 80
Fuel for houses and engines	2,345 89
Gas and electric light	876 65
Hardware and tools	185 34
Amount carried forward	$5,665 18

Amount brought forward	$5,665 18
Harnesses and repairs of	355 55
Hay, grain and straw	3,233 20
Horse hire and men (extra)	610 50
Horseshoeing	700 38
Hose and repairs of	943 74
Pay-roll	66,017 72
Printing and stationery	53 49
Washing bedclothes and towels	213 92
Other expenses	893 45
Total	$78,687 13
Balance unexpended	1,812 87

Fires and Alarms.

The record of fires and alarms for the year shows a decrease in bell alarms of fifty-two over the preceding year. The department has been called out a total of one hundred and fifty times to bell, as well as answering sixty-two still alarms received verbally or by telephone, making a total of two hundred and twelve alarms answered. This does not include nine second alarms that were given.

The total losses by fire, as near as could be ascertained, together with the amount of insurance, and the amount of insurance paid, were as follows :—

	Losses.	Insurance.	Insurance Paid.
On Buildings	$41,733 69	$226,148 02	$37,938 69
On Contents	44,818 68	124,922 00	42,184 13
Totals	$86,552 37	$351,070 02	$80,122 82

Discharges.

Sidney Smith, a call member of Engine Company No. 6, April 8, for neglect of duty.

Dennis F. Courtney, a call member of Engine Company No. 3, April 16, at his own request.

Sylvanus G. Griffin, a permanent member of Engine Company No. 4, April 20, at his own request.

William Stolba, a call member of Ladder Company No. 1, April 30, at his own request.

Patrick F. Brosnahan, a call member of Engine Company No. 4, June 18, at his own request.

Appointments.

Matthew L. Fairbairn appointed a call member December 22, and assigned to Ladder Company No. 2.

Charles A. Olsen a call member of Engine Company No. 6, appointed a permanent member May 25, and assigned as driver in Ladder Company No. 1.

Joseph T. Vocell appointed a call member June 8, and assigned to Engine Company No. 4.

Louis Clauss and Thomas F. Mullins appointed call members June 8, and assigned to Engine Company No. 6.

Benjamin McArthur appointed a call member June 8, and assigned to Ladder Company No. 1.

Thomas J. Lane appointed a call member June 8, and assigned to Ladder Company No. 2.

William D. Donovan appointed a call member October 26, and assigned to Ladder Company No. 3.

Decease of Members.

Death has invaded the ranks of this department during the year and removed two efficient members of the call force.

John B. Maguire of Ladder Company No. 2, a member since August 4, 1884, died of kidney trouble October 11, aged 40 years.

Lieutenant Thomas H. Donlan of Ladder Company No. 1, a member since July 17, 1888, died of pneumonia November 13, aged 36 years.

The department paid the usual funeral honors in both cases, and their families were substantially aided by the Firemen's Relief Association.

Casualties.

I am pleased to report that the number of accidents to the members of the force during the year has been very small, and none of a serious character.

Dennis F. Courtney of Engine Company No. 3, while working at a fire March 16, ran a nail in his foot. Off of duty 8 days.

William Parks, driver of hose-wagon No. 6, on March 13, after having exercised his horse, and while in the act of backing the wagon under the shed, the horse became frightened at a piece of paper blowing across his head which caused him to run, striking the wagon against the fence, and throwing Mr. Parks to the pavement, injuring his right hip to such an extent that he has been unable to perform any duty since.

Exurie J. Ouimette of Ladder Company No. 3, while exercising the horses on August 17, received severe injury to his hand, rendering him unable to do duty for 13 days.

Conclusion.

In closing this report I wish to return my thanks to the Honorable Mayor, the City Council, and the Committee on Fire Department for the deep interest manifested by them in all matters pertaining to this department during the year.

The police are also entitled to the thanks of this department for their prompt arrival at fires and the valuable assistance rendered.

My thanks are also due the officers and men of the Fire Department for their prompt and faithful discharge of duty the past year.

Respectfully submitted,

THOMAS J. CASEY,

Chief Engineer.

APPENDIX

ROLL OF OFFICERS AND MEMBERS.

Engineers.

Name.	Rank.	Age.	Residence.
Permanent Force.			
Thomas J. Casey.....	Chief Engineer....	64	449 Cambridge Street.
Call Force.			
Nathaniel W. Bunker...	Dist. Chief Engineer	54	97 Pemberton Street.
William B. Cade.....	" "	63	27 Park Street.
Permanent Force.			
James M. Casey.....	Chief's Driver.....	33	775 Cambridge Street.

Engine Company No. 1.

House, Brattle Square.

No. of Badge.	Name.	Rank.	Age.	Residence.
	Permanent Force.			
1	Edward E. Priest..	Engineman.....	61	96 Winthrop Street.
31	Daniel E. Powers..	Asst. Engineman	38	37 Ash Street.
2	Hiram W. Hooker..	Driver	58	Engine House.
28	Daniel E. Shea.....	"	40	54 Banks Street.
	Call Force.			
27	John L. Jones, Jr..	Captain	46	209 Green Street.
29	Thos. H. Kneeland.	Lieutenant.....	33	17 Eliot Street.
25	James Jefferson.. .	Hoseman.....	43	9 Eliot Street.
30	John W. Johnston..	"	27	9 Kinnaird Street.
23	J. Joseph Corcoran.	"	37	34 Ash Street.
26	Walter E. Chapman.	"	30	27 Athens Place.
74	James W. Irwin....	"	42	5 Story Street.
65	Augustin B. Osborn.	"	38	99 Mt. Auburn Street.

Engine Company No. 2.

House, Massachusetts Avenue.

No. of Badge.	Name.	Rank.	Age.	Residence.
	Permanent Force.			
41	William H. Cairns..	Engineman.....	34	103 School Street.
80	John H. McDermott	Asst. Engineman	46	11 Dodge Street.
114	Angus H. McDonald	Driver	27	106 Washington St.
6	Albert F. Sawyer..	"	54	18 Brookline Street.
	Call Force.			
32	James Cunningham.	Captain	55	25 State Street.
33	Arthur C. Day.....	Lieutenant	61	47 Austin Street.
35	Benjamin D. Foss...	Hoseman.....	61	28 Elm Street.
37	John Haley..... ..	"	43	344 Massachusetts Ave.
88	Charles H. Cutting..	"	45	6 Harold Place.
40	George F. Donovan.	"	28	54 Sidney Street.
107	William H. Hanson.	"	30	73 Hampshire Street.
119	Robert J. Ballantine	"	36	403 Putnam Avenue.

Engine Company No. 3.

House, Third Street.

No. of Badge.	Name.	Rank.	Age.	Residence.
	Permanent Force.			
7	Hiram Blood.....	Engineman.....	66	40 Fifth Street.
62	Charles A. Blair....	Asst. Engineman	36	22 Springfield Street.
8	Peter F. McSorley..	Driver	38	33 Fourth Street.
49	Patrick J. Hayes...	"	35	92 Gore Street.
	Call Force.			
42	Walter Baker.....	Captain	44	91 Gore Street.
48	John F. Brassel....	Lieutenant	43	3 Marney Street.
45	Elliot E. Alley.....	Hoseman.....	61	73 Thorndike Street.
46	Timothy J. Mahoney	"	50	346 Vine Street.
15	Patrick F. Dunlea..	"	36	129 Spring Street.
115	Frank McGrath....	"	33	168 Willow Street.
16	Thomas H. McCourt	"	26	43 Seventh Street.
112	Charles H. Leddy..	"	37	89 Gore Street.

Engine Company No. 4.

House, Massachusetts Avenue.

No. of Badge.	Name.	Rank.	Age.	Residence.
	Permanent Force.			
10	John E. Ricker.....	Engineman.....	53	2039 Mass. Avenue.
55	Jeremiah O'Connor.	Asst. Engineman	39	2 Olive Place.
19	Albert S. Benson...	Driver	55	52 Boylston Street.
11	George E. Muzzey..	"	56	5 Blake Street.
	Call Force.			
50	George F. Tibbets..	Captain	60	4 Tenney Street.
51	Dan'l A. McCaughin.	Lieutenant	40	Rear 5 Russell Street.
56	Josiah P. Parsons..	Hoseman.....	51	17 Regent Street.
54	George F. Durgin..	"	29	12 Regent Street.
53	Redmond M. Burke.	"	28	Rear 5 Russell Street.
57	John T. Henderson.	"	28	128 Reed Street.
52	Joseph T. Vocell...	"	32	12 Bolton Street.

Engine Company No. 5.

House, Inman Square.

No. of Badge.	Name.	Rank.	Age.	Residence.
	Permanent Force.			
13	Charles E. Conner..	Engineman.....	46	1337 Cambridge Street.
9	Lorenzo H. Dale....	Asst. Engineman	54	104 Otis Street.
3	Charles R. Hooker..	Driver	53	1411 Cambridge Street.
68	James H. Furfey...	"	40	59 Prince Street.
	Call Force.			
59	Francis P. Scanlan..	Captain	51	1343 Cambridge Street.
64	William T. King. ..	Lieutenant	41	100½ Hampshire St.
61	George W. McIntire.	Hoseman.....	43	70 Inman Street.
67	George P. Banister.	"	37	80 Green Street.
66	James H. McGrath.	"	41	1072 Cambridge Street.
60	George W. Stevens.	"	31	1307 Cambridge Street.
104	Charles Barney....	"	35	1307 Cambridge Street.
63	Geo. W. Montgomery	"	37	40½ Baldwin Street.

Engine Company No. 6.

House, River Street.

No. of Badge.	Name.	Rank.	Age.	Residence.
	Permanent Force.			
98	J. Lewis Howe.....	Engineman.....	44	184 River Street.
87	Charles A. Cairns..	Asst.Engineman	31	152 River Street.
127	John J. O'Callihan.	Driver	28	336½ Green Street.
34	William Parks.....	"	53	208 River Street.
	Call Force.			
24	John H. Brown	Captain	46	206 River Street.
101	John H. Robbins...	Lieutenant	42	34 Pearl Street.
100	John E. Savage.....	Hoseman.....	43	31 Kinnaird Street.
102	Melvin A. Priest....	"	40	16 Fairmont Street.
73	Charles H. Waite...	"	51	95 Pine Street.
106	James P. Welch....	"	34	38 State Street.
103	Thomas F. Mullins.	"	24	308 Western Avenue.
123	Louis Clauss.....	"	29	72 Allston Street.

Engine Company No. 7.

House, Main Street.

No. of Badge.	Name.	Rank.	Age.	Residence.
	Permanent Force.			
4	Thomas Wiseman...	Engineman....	53	804 Main Street.
5	John H. Walker....	Asst.Engineman	68	3 Williams Street.
85	Thomas F. O'Connell	Driver	36	81 Sixth Street.
36	John McCarthy....	"	44	34 Mt. Auburn Street.
	Call Force.			
93	George A. Garrity..	Captain	36	5 Pioneer Street.
124	Joseph A. Wood....	Lieutenant	35	81 Hampshire Street.
109	James E. Bligh.....	Hoseman.....	26	142 Willow Street.
108	Thos.A.Montgomery	"	33	5 Portsmouth Street.
126	Dennis R. Sullivan.	"	26	35 Harvard Street.
125	Edward Clark.....	"	29	234 Windsor Street.
86	James H. Skehan...	"	28	4 Washington Street.
96	Louis J. Anshelm...	"	37	41 Portland Street.

Chemical Engine Company No. 1.

House, Western Avenue.

No. of Badge.	Name.	Rank.	Age.	Residence.
	Permanent Force.			
17	Lewis C. Clark.....	Engineman.....	52	48 Western Avenue.
82	James T. McCabe...	Asst. Engineman	34	39 Green Street.
99	John H. Dardis.....	Driver	27	27 Park Street.

Chemical Engine Company No. 2.

House, Lexington Avenue.

No. of Badge.	Name.	Rank.	Age.	Residence.
	Permanent Force.			
94	George W. Butler..	Engineman.....	55	171 Lake View Ave.
58	William H. Barrow.	Asst. Engineman	28	182 Lake View Ave.
18	William Haley.....	Driver	51	133 Lexington Ave.

Ladder Company No. 1.

House, Eliot Square.

No. of Badge.	Name.	Rank.	Age.	Residence.
	Permanent Force.			
22	John T. McNamee..	Captain	42	94 Winthrop Street.
75	Charles A. Olsen...	Driver	30	10 Mt. Auburn Street.
117	Edward F. Conroy.	Ladderman.....	26	259 Mt. Auburn Street.
	Call Force.			
70	Thomas H. Donlan.	Lieutenant	36	Ladder House No. 1.
79	Edward P. Donahue	Ladderman.....	40	1 Willard Street Court.
72	Joseph E. Burke...	"	35	70 Plympton Street.
71	Willard H. Poole...	"	38	150 River Street.
14	Wm. H. Buchanan..	"	29	247 Mt. Auburn Street.
121	John D. Shea.....	"	26	5 Dyke Street.
122	Arthur G. McArthur	"	25	53 Magee Street.
92	Robert J. Buchanan	"	26	20 Grigg Street.
77	Benjamin McArthur	"	24	166 Putnam Avenue.

Ladder Company No. 2.

House, Portland Street.

No. of Badge.	Name.	Rank.	Age.	Residence.
	Permanent Force.			
43	William F. Newman	Captain	52	66 Winter Street.
20	Thomas Mimnaugh.	Driver	44	35 Warren Street.
38	Albert R. Waite	Ladderman	25	Ladder House No. 2.
	Call Force.			
81	James F. Dalton	Lieutenant	58	17 Squire's Court.
90	Albert Smith	Ladderman	43	167 Cherry Street.
95	Louis J. Stanger	"	43	275 Vine Street.
89	John J. Balfe	"	26	58 Porter Street.
110	James P. O'Neil	"	30	51 Bristol Street.
111	Jeremiah F. Hayes.	"	31	106 Spring Street.
'97	Matthew L. Fairbairn	"	27	22 Palermo Street.
116	Thomas J. Lane	"	33	35 Warren Street.
113	William G. Johnson	"	36	14 Springfield Street.

Ladder Company No. 3.

House, Massachusetts Avenue.

No. of Badge.	Name.	Rank.	Age.	Residence.
	Permanent Force.			
21	Thomas L. Hunter.	Captain	57	407 Massachusetts Ave.
44	Cutler L. Vose	Driver	29	1 Hancock Place.
47	Exurie J. Ouimette.	Tillerman	34	456 Massachusetts Ave.
118	Wm. C. Richardson.	Ladderman	29	48 Fairmont Street.
	Call Force.			
69	Charles Emerson	Lieutenant	52	5 Kinnaird Street.
76	Charles A. Sharon.	Ladderman	49	Rear 13 Pine Street.
91	Lincoln E. Wheeler.	"	53	48 Cherry Street.
84	William D. Donovan	"	24	54 Sidney Street.

FIRES AND ALARMS.

From December 1, 1896 to December 1, 1897.

DECEMBER.

Tuesday, Dec. 1, 11.01 a. m. Box 2.

Austin Street, Boston. Charlestown District. Owned and occupied by Boston and Maine Railroad Co. as coal shed. Engine Companies Nos. 3 and 7 rendered assistance.

Tuesday, Dec. 1, 9.15 p. m. Box 32.

No. 238 Columbia Street. Dwelling. Fire was in Somerville.

Wednesday, Dec. 2, 3.19 a. m. Box 43.

No. 99 Banks Street. Owned by Peter Burns. Occupied by W. A. Haartz as bakery. Loss, $20. Insurance $700. Cause, barrel of flour placed near stove taking fire.

Wednesday, Dec. 2, 7.30 p. m. Still.

No. 51 Highland Street. Occupied by T. B. Ticknor as dwelling. No loss. Cause, soot in chimney afire.

Thursday, Dec. 3, 12.55 a. m. Box 6.

No. 81 Main Street. Owned and occupied by Baker, Hunnewell Co. as wood and coal wharf. Loss trifling. Cause, hot ashes setting pile of wood afire.

Thursday, Dec. 3, 10.05 a. m. Still.

No. 18 Story Street. Occupied by H. J. Chase as dwelling. Cause, steam mistaken for fire.

Friday, Dec. 4, 4.53 p. m. Box 64.

No. 18 Concord Avenue. Owned by J. W. White. Loss, $4,122. Insurance, $10,000. Occupied by J. W. White as dwelling. Loss, $3,500. Insurance, $4,000. Originated in the first floor and extended to the roof. Cause, overheated furnace pipes.

Saturday, Dec. 5, 1.56 p. m. Box 16.

No. 4 Jordan Place. Owned by W. W. Forbes. Loss, $45. Insurance, $1,200. Occupied by Henry Allen as dwelling. No loss. Originated in wood piled up around the stove to dry.

Wednesday, Dec. 9, 1. p. m. Still.

No. 385 Putnam Avenue. Owned and occupied by Dover Stamping Co. as tin ware manufactory. Loss, trifling. Cause, kettle of grease taking fire.

Wednesday, Dec. 9, 3.15 p. m. Box 28.

184-194 Broadway. Curtis, Davis & Co.'s soap works. No loss. Cause, accidental auxiliary alarm.

Saturday, Dec. 12, 1.01 a. m. Box 25.

No. 527 Massachusetts Avenue. Owned and occupied by D. A. Buckley as printing office. Cause, escaping steam mistaken for fire.

Monday, Dec. 14, 5.05 p. m. Box 26.

Main Street. Owned by West End Street Railway Co. as a switch box. Cause, defect in electric wires.

Monday, Dec. 14, 6.10 p. m. Still.

No. 167 Massachusetts Avenue. Occupied by J. A. Prince as confectionery store. Cause, smoke mistaken for fire.

Thursday, Dec. 17, 8.17-8.27 p. m. Box 36.

No. 682-688 Massachusetts Avenue. Owned by G. R. Southwick. Loss, $5,032. Insurance, $8,000. Occupied by Kennedy & Rourke as furniture manufactory. Loss, $2,919. Insurance, $4,000. Occupied by Earl & Rogers as laundry. Loss, $1,600. Insurance, $2,000. Cause, unknown.

Saturday, Dec. 19, 11.44 p. m. Box 36.

No. 582 Massachusetts Avenue. Owned by Cambridge Building Association. Loss, $35. Insurance, $300. Occupied by John Kelman as variety store. Loss, $68. Insurance, $1,000. Cause, dropping of a lighted match into box of sawdust.

Monday, Dec. 21, 7.30 a. m. Still.

No. 222-224 Main Street. Owned and occupied by Hugh Stewart & Co. as carriage manufactory. Loss, slight. Originated in roof of boiler room. Cause, overheated smoke pipe.

Wednesday, Dec. 23, 3.25 a. m. Still.

Foot of Erie Street. Empty freight car on tracks of the Boston & Albany Railroad Co. Loss, $100. Insurance, $100. Cause, set afire by tramps.

Friday, Dec. 25, 1.12 p. m. Box 32.

No. 459 Columbia Street. Owned by James Sugrue. Loss, $50. Insurance, $500. Occupied by James Conway as dwelling. No loss. Cause, thawing out frozen water pipe.

Friday, Dec. 25, 6.15 p. m. Still.

No. 429 Massachusetts Avenue. Owned by J. S. Orne. Loss, $50. Insurance, $4,000. Occupied by J. S. Orne as dwelling. Loss, $75. Insurance, $4,500. Cause, candle setting fire to a Christmas tree.

Saturday, Dec. 26, 7.17 p. m. Box 46.

No. 9 Clinton Street. Occupied by C. H. Wilder as dwelling. Loss, trifling. Cause, lighted candle igniting Christmas tree.

Monday, Dec. 28, 4.30 p. m. Box 26.

No. 722 Main Street. Owned by Elias Howe estate. Loss, $5. Insurance, $500. Originated on the roof. Cause, sparks.

Monday, Dec. 28, 5.53 p. m. Box 51.

No. 450 Broadway. Owned by J. A. Wood. Loss, slight. No insurance. Occupied by J. D. Gainey as dwelling. Loss, trifling. Originated in a clothes-closet. Cause, unknown.

Monday, Dec. 28, 7.07 p. m. Box 36.

No. 20 Western Avenue. Owned by G. R. Southwick. No loss. Occupied by W. H. Zerkel as cabinet-maker. Loss, $175. Insurance, $500. Cause, upsetting of a lighted kerosene oil lamp.

Wednesday, Dec. 30, 11.34 a. m. Box 21.

Foot of Erie Street. Empty freight car on tracks of Boston & Albany Railroad Co. Loss, $10. Insurance, $10. Cause, set afire by boys.

JANUARY.

Friday, Jan. 1, 11.30 a. m. Still.

Western Avenue. Owned and occupied by Cambridge Electric Light Co. as coal shed. Loss, trifling. Cause, spontaneous combustion.

Friday, Jan. 1, 7.57 p. m. Box 75.

Raymond Street. Cause, drying plaster in new building, the steam being taken for fire.

Sunday, Jan. 3, 9.15 p. m. Box 64.

No. 19 Berkeley Street. Owned by Norton Folsom. Loss, $40. Insurance, $8,000. Occupied by Norton Folsom as dwelling. Loss, $66. Insurance, $4,000. Cause, heat from top of a kerosene lamp setting paper box afire.

Wednesday, Jan. 6, 5.29 p. m. Box 83.

No. 175 Brattle Street. Occupied by T. H. O'Connor as dwelling. No loss. Cause, soot in chimney taking fire.

Friday, Jan. 8, 11.02 a. m. Box 25.

No. 17 State Street. Owned by H. F. Russ as dwelling. Loss, trifling. Unoccupied. Originated amongst old rubbish in the cellar. Cause, set afire by boys.

Friday, Jan. 8, 6.12 p. m. Box 162.

Bradbury Street. Cause, boys setting fire to a dilapidated building formerly used as a dwelling.

Thursday, Jan. 14, 4.15 a. m. Box 68.

Foot of Regent Street. Two empty freight cars on tracks of Fitchburg Railroad Co. Loss, $293. Insurance, $293. Cause, supposed by sparks from a locomotive.

Thursday, Jan. 14, 10.10 p. m. Still.

North Street. Cause, rubbish burning.

Sunday, Jan. 17, 2.50 p. m. Box 14.

No. 151 Otis Street. Owned and occupied by Mrs. Michael Lyons as dwelling. Cause, a smoking oil-stove.

Tuesday, Jan. 19, 9.19 a. m. Box 73.

No. 281 Rindge Avenue. Owned by Margaret Sweeney. Occupied by John Bittner as dwelling. Loss, $20. No insurance. Originated in a bed. Cause, unknown.

Wednesday, Jan. 20, 12.10 p. m. Box 53.

No. 59 Plympton Street. Owned by E. T. Pike. Loss, $40. Insurance, $3,000. Occupied by John Hillis as dwelling. No loss. Cause, thawing out frozen water pipe.

Saturday, Jan. 23, 6.13 p. m. Still.

No. 13 Magazine Street. Owned by A. E. Yearley. Loss, $75. Insurance, $3,500. Occupied by F. O. Webber as dwelling. Loss, $587. Insurance, $2,500. Cause, explosion of a kerosene oil lamp.

Monday, Jan. 25, 10.47 p. m. Box 76.

No. 21 Arlington Street. Owned and occupied by I. W. Jouett as dwelling. No loss. Cause, paper in ash-pit burning.

Tuesday, Jan. 26, 12.31 p. m. Box 8.

No. 34 Spring Street. Owned by C. W. Munroe. Loss, $27. Insurance, $1,000. Occupied by Frank Frates as dwelling. No loss. Originated in wood-box behind the stove. Cause, unknown.

Sunday, Jan. 31, 10.27 p. m. Box 10.

First Street. Owned and occupied by C. W. Munroe as storehouse. Loss, $17. Insurance, $1980. Originated in the L. Cause, incendiary.

FEBRUARY.

Saturday, Feb. 6, 4.21 p. m. Box 26.

No. 764 Main Street. Owned by heirs of Elias Howe. Occupied by C. E. Johnson as dwelling. Loss, slight. Originated in the cellar. Cause, wood piled around the furnace taking fire.

Wednesday, Feb. 10, 7.20 p. m. Still.

No. 2 Divinity Avenue. Owned and occupied by J. D. Whitney as dwelling. No loss. Originated in the shed. Cause, hot ashes in barrel.

Tuesday, Feb. 16, 10.10 p. m. Still.

No. 19 Summer Street. Owned by W. G. MacLeod. Loss, $25. Insurance, $2,000. Occupied by A. M. Barrett as dwelling. Loss, $200. No insurance. Originated in a clothes-closet on second floor. Cause, unknown.

Thursday, Feb. 18, 9.54 p. m. Box 41.

No. 2 Rockwell Street. Owned by F. E. Ireland. Loss, $249. Insurance, $2,700. Occupied by R. E. Ireland as bakery and dwelling. Loss, $228. Insurance, $800. Cause, unknown.

Friday, Feb. 19, 9.40 p. m. Still.

Massachusetts Avenue. Hastings Hall. Owned by Harvard College. Occupied as dormitory. Cause, slight fire in a clothes-closet.

Thursday, Feb. 25, 7.25 p. m. Box 271.

No. 2452 Massachusetts Avenue. Owned by W. A. Easter. Loss, $25. Insurance, $500. Occupied by W. A. Easter as blacksmith and wheelwright shop. Loss, $100. Insurance, $500. Originated in the office. Cause, unknown.

Friday, Feb. 26, 12.30 p. m. Still.

No. 43 Gore Street. Occupied by J. H. Sullivan as apothecary. Loss, $20. Insurance, $2,000. Cause, oil-stove taking fire.

Saturday, Feb. 27, 6.14 a. m. Box 29.

No. 341 Windsor Street. Owned and occupied by Elizabeth Colbert as dwelling. No loss. Cause, soot in chimney afire.

Saturday, Feb. 27, 9.57 p. m. Box 10.

No. 1 Thorndike Street. Owned by C. W. Munroe. Loss, $500. Insurance, $500. Occupied by C. W. Munroe as storehouse. Loss, $340. Insurance, $500. Occupied by Fred Ingersoll as stable. Loss, $63. No insurance. Occupied by A. Johanson & Brother as ironworkers. Loss, $230. Insurance, $1,500.

First Street. Owned by Daniel Doherty as office. Loss, $25. No insurance. Originated in shed connected with stable. Cause, incendiary.

MARCH.

Thursday, March 4, 7.51 p. m. Box 7.

No. 242 Third Street. Owned by Patrick Conlan. Occupied by D. D. O'Connor as dwelling. Loss, slight. Cause, explosion of a kerosene oil lamp.

Friday, March 5, 3.46 p. m. Box 271.

Dudley Street. Owned and occupied by the City of Cambridge as Sleeper schoolhouse. Loss, $1,000. No insurance. Cause, woodwork ignited by heat from furnace pipes.

Sunday, March 7, 10.22 a. m. Box 149.

Rear 16 Magnolia Avenue. Owned by Eugene Gormley. No loss. Cause, drying plaster in new house. Smoke mistaken for fire.

Friday, March 12, 10.38 a. m. Box 52.

Harvard Street. Old Cambridge Baptist Church. Cause, smoke escaping from chimney mistaken for fire.

Tuesday, March 16, 9.27-9.34 a. m. Box 12.

No. 223 Bridge Street. Owned by J. P. Squire estate. Loss, $1,900. Insurance, $2,000. Occupied by G. E. Baxter as drying room for lumber. Loss, $730. Insurance, $2,000. Occupied by Parker & Page as lumber. Loss, $354. Insurance, $1,500. No. 221 Bridge Street. Owned

and occupied by L. G. Burnham & Co as office and stable. Loss $400. Insurance, $5,000. Originated in drying room. Cause, supposed from a tobacco pipe in a coat pocket.

Wednesday, March 17, 6.49 a. m. Box 31.

No. 41 Porter Street. Owned and occupied by J. E. Purcell as stable. Loss, $8. Insurance, $500. Originated on the roof. Cause, overheated stove pipe.

Thursday, March 18, 10.08 a. m. Box 152.

No. 391 Harvard Street. Owned by Walter Wesselhoeft. Loss, $1,000. Insurance, $8,000. Occupied by Walter Wesselhoeft as dwelling. Loss, $600. Insurance, $4,000. Originated in the cellar. Cause, hot ashes in barrel.

Friday, March 19, 4.37 p. m. Box 25.

No. 365 Massachusetts Avenue. Owned by C. B. Moller. Loss, $1,116. Insurance, $20,500. Occupied by C. B. Moller as furniture dealer. Loss, $6,505. Insurance, $18,000. Originated on fifth floor. Cause, unknown.

Saturday, March 20, 4.32 p. m. Box 149.

No. 16 Magnolia Avenue. Owned by Eugene Gormley. Loss, $185. Insurance, $3,500. Occupied by H. J. Taylor as dwelling. Loss, $50. Insurance, $700. Originated in a clothes-closet on second floor. Cause, unknown.

Sunday, March 21, 4.09-4.14 p. m. Box 26.

No. 336 Main Street. Owned by George W. Gale Lumber Co. Loss, $550. Insurance, $550. Occupied by George W. Gale Lumber Co. as lumber shed. Loss, $1,997. Insurance, $1,997. Cause, set on fire by boys.

Thursday, March 25, 11.43 p. m. Box 137.

No. 18 Grigg Street. Owned by G. H. Cavanaugh. Loss, $198. Insurance, $1,500. Occupied by S. F. McArthur as dwelling. Loss, $9. Insurance, $1,000. Originated on second floor. Cause, defective chimney.

Friday, March 26, 12.56 a. m. Box 137.

No. 18 Grigg Street. Cause, rekindling of fire.

APRIL.

Thursday, April 1, 12.29 p. m. Box 114.

Spring Street. Owned and occupied by Goepper Brothers as storehouse for barrels. Cause, smoke mistaken for fire.

Saturday, April 3, 6.40 p. m. Still.

No. 1407 Cambridge Street. Owned by M. J. Harty. Loss, trifling. Occupied by T. S. Weeks as dry goods. Loss, $100. Insurance, $700. Cause, ignition of cotton wrappers while lighting gas.

Tuesday, April 6, 9.14 p. m. Box 71.

No. 2601 Massachusetts Avenue. Owned by Timothy Cunniff. Loss, $46. Insurance, $3,000. Occupied by New England Pickling Co. Loss, $189. Insurance, $600. Originated in a drawer in which matches were kept. Cause, supposed by rat and matches.

Wednesday, April 7, 2.29 p. m. Box 28.

No. 9 Webster Avenue. Owned by Margaret Munroe. Loss, $125. Insurance $500. Occupied by Philip Munroe as dwelling. Loss, $20. No insurance. Originated in the attic. Cause, defective chimney.

Thursday, April 8, 5 p. m. Still.

No. 386 Main Street. Ivers & Pond Piano Manufactory. Cause, accidental automatic alarm.

Friday, April 9, 7.40 p. m. Still.

No. 17 Mt. Auburn Street. Occupied by Samuel Richardson as dwelling. No loss. Cause, soot in chimney afire.

Saturday, April 10, 11.15 a. m. Still.

No. 4 Houghton Street. Owned and occupied by M. J. Mulkern as dwelling. Loss, trifling. Cause, child and matches.

Tuesday, April 13, 3.45 p. m. Box 56.

Francis Avenue. Cause, grass burning.

Wednesday, April 14, 7.25 p. m. Still.

No. 1382 Massachusetts Avenue. Cause, smoke mistaken for fire.

Friday, April 16, 2.11 a. m. Box 71.

No. 5 Brookford Street. Owned by F. R. Henderson. Loss, $572. Insurance, $1,000. Occupied by Jacob Vokey as dwelling. Loss, $68. Insurance, $400. Originated at head of cellar stairs, and extended to roof. Cause, supposed of incendiary origin.

Monday, April 19, 5.23 p. m. Box 36.

No. 2 Ashburton Place. Occupied by Clarence Davis as dwelling. Loss, slight. Originated on the roof. Cause, sparks.

Tuesday, April 20, 3.12 p. m. Box 36.

No. 21½ Inman Street. Owned by O. H. Luke. No loss. Occupied by Robert Graham as dwelling. Loss, $87. Insurance, $1,000. Originated in a bedroom. Cause, oil in kerosene stove igniting.

Tuesday, April 20, 5.26 p. m. Box 427.

No. 30 Davis Street. Owned by J. L. Bailey. Loss, $20. Insurance, $1,500. Unoccupied dwelling. Originated on the roof. Cause, sparks.

Wednesday, April 21, 1.19 a. m. Box 28.

No. 184 Broadway. Owned and occupied by Curtis, Davis & Co. as machine shop. Loss, trifling. Cause, defect in gas burner.

Wednesday, April 21, 2.32 p. m. Box 12.

No. 196 Bridge Street. Owned by Granger heirs. Occupied by J. F. Wallace as dwelling. No loss. Originated in rags on attic stairs. Cause, unknown.

Thursday, April 22, 12.31 a. m. Box 78.

No. 4 Garden Court. Owned by J. W. Fennick. Loss, $700. No insurance. Occupied by several families. Loss, $300. No insurance. Originated on second floor. Cause, defective chimney.

Saturday, April 24, 8.45 a. m. Box 14.

No. 30 Seventh Street. Owned by John O'Brien. Loss, $15. Insurance, $1,800. Occupied by Michael Sheehan as dwelling. Loss, $25. Insurance, $1,000. Originated in a bedroom. Cause, child and matches.

Sunday, April 25, 2 p. m. Still.

Fire on Washington Street, Somerville. Assistance called for. Engine Co. No. 5, responded.

Monday, April 26, 12.09 a. m. Box 32.

No. 248 Elm Street. Owned by W. A. Groustein. Loss, $82. Insurance, $3,000. Occupied by Joseph Geddis as dwelling. Loss, $34. Insurance, $1,000. Originated in bedroom. Cause, upsetting of a kerosene oil lamp.

Monday, April 26, 7.30 p. m. Still.

Fifth Street. Cause, rubbish on dump burning.

Wednesday, April 28, 5.15 p. m. Still.

Pelham Street. Owned and occupied by H. M. Bird as iron foundry. Loss, slight. Originated on the roof. Cause, sparks.

MAY.

Saturday, May 1, 5.40 p. m. Still.

Rear 55 Green Street. Owned by Patrick Sheehan. Loss, $115. Insurance, $1,000. Occupied by M. J. Sheehan as metal cornice manu-

factory. Loss, $100. Insurance, $1,000. Originated in a closet among oiled rags. Cause, spontaneous combustion.

Monday, May 3, 1.15 p. m. Still.

No. 101 Gore Street. Owned by F. A. Wilmot. Occupied by several families as dwellings. No loss. Originated in old paper in cellar. Cause, unknown.

Friday, May 7, 5.45 p. m. Still.

No. 533 Putnam Avenue. Occupied by W. H. Langdon as dwelling. Cause, soot in chimney afire.

Saturday, May 8, 7 a. m. Box 61.

No. 78 Boylston Street. Owned by Richard Beckett heirs. Loss, trifling. Occupied as a dwelling. Originated on the roof. Cause, sparks.

Saturday, May 8, 3.27 p. m. Box 92.

No. 65 Holworthy Street. Occupied by Christopher Newman as dwelling. No loss. Cause, kettle of soap grease on stove taking fire.

Saturday, May 8, 5.32 p. m. Box 427.

No. 30 Davis Street. Owned by J. L. Bailey as dwelling. Loss, $20. Insurance, $1,480. Unoccupied. Originated on the roof. Cause, sparks.

Sunday, May 9, 6.15 p. m. Still.

Harvard Street. Cause, burning of old lumber, set afire by children.

Monday, May 10, 10.20 a. m. Box 31.

No. 38 Willow Street. Occupied by Bridget Maloney as dwelling. Loss, trifling. Originated in the attic. Cause, child and matches.

Monday, May 10, 6.39 p. m. Box 71.

Brookford Street. Owned and occupied by F. L. Sawyer & Co. as carpenters' supplies. Loss, trifling. Originated in shaving chute. Cause, sparks.

Saturday, May 15, 12.18 a. m. Box 271.

No. 2360 Massachusetts Avenue. Owned by W. L. Hooper. Loss, $35. Insurance, $1,500. Occupied by Richard Kennedy as lunch and pool room. Loss, trifling. Originated in cooking room. Cause, unknown.

Saturday, May 15, 9.15 p. m. Still.

No. 22 Spring Street. Occupied by Michael Ryan as dwelling. No loss. Cause, upsetting of a lighted kerosene oil lamp.

Wednesday, May 19, 10.19 p. m. Box 36.

No. 37 Prospect Street. Owned by J. M. Robbins. Loss, $150. Insurance, $3,000. Occupied by I. W. Morse as dwelling. Loss, $150. In-

surance, $300. Cause, top of a lighted match flying into and setting fire to drapery.

Saturday, May 22, 1.20 p. m. Still.

Second Street. Keeler & Co.'s furniture manufactory. Cause, accidental automatic alarm.

Monday, May 24, 4.44 p. m. Box 26.

No. 18 Moore Street. Occupied by S. B. Turley as dwelling. Loss, trifling. Originated in cellar. Cause, upsetting of a kerosene oil lamp.

Tuesday, May 25, 5.40 a. m. Still.

River Street. Cause, electric car afire.

Friday, May 28, 9.33 p. m. Box 12.

Water Street. Owned by Daniel Murphy as portable engine-house. Loss, $25. No insurance. Cause, hot coals.

Saturday, May 29, 7.54 a. m. Box 71.

No. 5 Brookford Street. Owned by Emma Arrell. Loss, $108. Insurance, $1,000. Occupied by Alfred Belanger as dwelling. Loss, $30. No insurance. Cause, upsetting of a kerosene oil stove.

JUNE.

Monday, June 7, 12.50 a. m. Still.

No. 8 Elmwood Avenue. Occupied by C. C. Foster as dwelling. Cause, smoke mistaken for fire.

Friday, June 11, 1.40 p. m. Still.

No. 386 Main Street. Ivers & Pond piano manufactory. Cause, accidental automatic alarm.

Saturday, June 12, 8.40 a. m. Still.

No. 1 Otis Street. Irving & Casson furniture manufactory. Cause, accidental automatic alarm.

Wednesday, June 16, 8.30 p. m. Still.

No. 48 Broadway. Occupied by Patrick McCarthy as dwelling. No loss. Cause, upsetting of a kerosene oil lamp.

Thursday, June 17, 12.28 p. m. Box 162.

No. 26 Sparks Street. Owned by Patrick O'Connor. Loss, $80. Insurance, $2,000. Occupied by several families as dwellings. No loss. Originated in the roof. Cause, firecrackers.

Thursday, June 17, 1.25 p. m. Box 4.

No. 2-3 Squires Court. Owned by estate of J. P. Squire. Loss, $257. Insurance, $7,000. Occupied by several families. Loss, trifling. Originated in the roof. Cause, firecrackers.

Thursday, June 17, 4.42 p. m. Box 137.

Western Avenue. Cause, rubbish burning on the dump.

Friday, June 18, 10.10 a. m. Still.

No. 54 Columbia Street. Cause, smoke in cellar mistaken for fire.

Saturday, June 19, 8.05 a. m. Still.

No. 18 Western Avenue. Occupied by Frank Woodward as lunch room. No loss. Cause, naphtha stove taking fire.

Friday, June 25, 9 p. m. Box 152.

No. 1248 Massachusetts Avenue. Owned by John Holmes. No loss. Occupied by Louis Fine as shoe store. Loss, $25. Insurance, $700. Cause, curtain ignited by gas jet.

Tuesday, June 29, 11.40 a. m. Still.

Hovey Avenue. Owned by American Electric Lead Works. No loss. Originated in coal-bin outside of building. Cause, set afire by children.

JULY.

Thursday, July 1, 10.05 p. m. Box 82.

No. 2 Appleton Street. Owned and occupied by L. L. Howe as dwelling. Loss, slight. Originated in the porch. Cause falling of a lighted kerosene oil lamp.

Friday, July 2, 2.34 p. m. Box 93.

No. 1 Cushing Place. Owned by William McChlerie as dwelling. Loss, $12. Insurance, $2,000. Originated in the roof. Cause, struck by lightning.

Sunday, July 4, 5.50 p. m. Still.

Foot of East Street. Cause, manure pile burning.

Monday, July 5, 11.31 a. m. Box 34.

No. 320 Columbia Street. Owned by estate of Philip Rady as dwelling. Loss, trifling. Originated on the roof. Cause, firecrackers.

Monday, July 5, 6.20 p. m. Still.

No. 196 Auburn Street. Owned by A. T. Stewart as dwelling. Loss, trifling. Originated on the roof. Cause, firecrackers.

Monday, July 5, 9.25 p. m. Still.

No. 2452 Massachusetts Avenue. Owned by W. A. Easter as wheelwright. Loss, trifling. Originated on the roof. Cause, firecrackers.

Monday, July 5, 9.41 p. m. Box 24.

No. 184 Brookline Street. Owned by Winnifred Glynn as dwelling. Loss, trifling. Originated on the roof. Cause, fireworks.

Tuesday, July 6, 8.50 a. m. Still.

No. 9 Winter Street. Owned by H. N. Hovey as dwelling. Loss, trifling. Originated on the roof. Cause, fireworks.

Wednesday, July 7, 2.39 p. m. Box 52.

Warren Place. Owned by S. H. Blodgett. Loss, 365. Insurance, $500. Occupied by A. V. Millett as stable. Loss, $250. Insurance, $1,025. Cause, oil igniting in kerosene stove.

Thursday, July 8, 9.24 a. m. Box 32.

No. 1175 Cambridge Street. Owned by T. F. Rafferty. Loss, $50. Insurance, $3,000. Occupied by Thomas Seymour as dwelling. Loss, trifling. Cause, filling oil stove while lighted.

Thursday, July 8, 10.04 a. m. Box 73.

No. 5 Jackson Street. Owned and occupied by Selina Pershett as dwelling. Originated in the L. Cause, oil igniting in kerosene stove.

Saturday, July 10, 9.40 a. m. Box 17.

No. 93 Hastings Street. Occupied by James Winfield as dwelling. Loss, slight. Cause, smoking kerosene oil stove.

Sunday, July 11, 4.40 a. m. Still.

No. 15 Glenwood Avenue. Cause, lime slacking in cellar of new building.

Sunday, July 11, 9.27 a. m. Box 136.

No. 1 Austin Place. Occupied by J. E. Purple as dwelling. No loss. Cause, oil igniting in kerosene stove.

Sunday, July 11, 10.12 p. m. Box 152.

No. 10 Linden Street. Owned by W. H. Niles. Loss, $60. No insurance. Occupied by W. H. Niles as tool-house. Loss, $100. No insurance. Cause, spontaneous combustion.

Saturday, July 17, 6.40 p. m. Still.

Main Street. Electric street car afire. Cause, defective motor.

Sunday, July 18, 4.20 p. m. Still.

First Street. Owned and occupied by Coleman Brothers as coal wharf. Loss, trifling. Originated in the floor of boiler-room. Cause, hot coals.

Wednesday, July 21, 10.01 a. m. Box 48.

No. 131 Inman Street. Occupied by Henry Smith as tailor. Loss, $20. No insurance. Cause, ignition of naphtha.

Wednesday, July 21, 5.26-5.31 p. m. Box 10.

Second Street. Owned by M. C. Shaffer. Loss, $1,765. Insurance, $7,000. Occupied by Keeler & Co as furniture manufactory. Loss, $11,612. Insurance, $16,000. Originated in finishing-room. Cause, spontaneous combustion.

Thursday, July 22, 8.50 a. m. Still.

No. 10 Porter Street. Owned by John Dempsey. Loss, $17. Insurance, $1,300. Occupied by John Dempsey as dwelling. Loss, $30. Insurance, $300. Originated in a bedroom. Cause, child and matches.

Thursday, July 22, 2.40 p. m. Still.

No. 287 Green Street. Cause, slacking of lime. Loss, slight.

Thursday, July 22, 7.30 p. m. Box 26.

No. 14 Moore Street. Owned by E. D. Brooks as dwelling. No loss. Originated in stairway. Cause, defective gas burner.

Friday, July 23, 8.16 p. m. Box 28.

No. 49 Burleigh Street. Occupied by Peter Cassidy as dwelling. Loss, $44. Insurance, $500. Originated in the basement. Cause, breaking of kerosene oil lamp.

Saturday, July 24, 9.16 a. m. Box 73.

Rindge Avenue. Owned and occupied by Bay State Brick Co. as kiln shed. Loss, $50. No insurance. Cause, sparks from kiln.

Sunday, July 25, 10.23 p. m. Box 9.

No. 103 Cambridge Street. Owned by C. W. Dailey. Loss, $116. Insurance, $2,500. Occupied by several families as dwellings. No loss. Originated in a partition on second floor. Cause, rats and matches.

Monday, July 26, 8.24 p. m. Box 32.

No. 282 Webster Avenue. Owned by Heffernan heirs as dwelling. No loss. Originated in the cellar. Cause, incendiary.

Wednesday, July 28, 10.13 a. m. Box 136.

Sterling Terrace. Cause, kettle of tar afire.

Wednesday, July 28, 12.13 p. m. Box 27.

No. 128 Harvard Street. Occupied by J. W. Sylva as dwelling. Loss, slight. Originated in a child's crib. Cause, child and matches.

Thursday, July 29, 2.14 p. m. Box 134.

No. 3 Murdock Street. Occupied by Joshua Wiley as dwelling. Loss, slight. Cause, clothes on a line dropping on hot stove.

AUGUST.

Tuesday, Aug. 3, 5.40 p. m. Still.

No. 25 Central Square. Occupied by F. C. Garth as photographer. Loss, trifling. Originated in water closet. Cause, supposed by a lighted cigarette stub.

Saturday, Aug. 7, 1.28 p. m. Box 7.

No. 146 Charles Street. Occupied by McDonald Brothers. No loss. Cause, burning straw in yard.

Monday, Aug. 9, 8.23 p. m. Box 125.

No. 17 Franklin Street. Occupied by J. T. O'Brien as dwelling. No loss. Cause, lighted match dropping into pan of oil.

Monday, Aug. 9, 8.50 a. m. Still.

No. 135 Cambridge Street. Cause, soot in chimney afire.

Wednesday, Aug. 11, 5.30 a. m. Still.

No. 206 Hampshire Street. Occupied by C. E. Berry as machinist. No loss. Originated in basement. Cause, hot ashes in box.

Saturday, Aug. 14, 12.45 a. m. Still.

Massachusetts Avenue. Cause, electric car afire, defect in motor.

Tuesday, Aug. 17, 11.14 p. m. Box 46.

No. 332 Green Street. Owned and occupied by Patrick Heaney as dwelling. Loss, $10. Insurance, $1,000. Originated in a partition. Cause, rats and matches.

Wednesday, Aug. 18, 7.57 p. m. Box 71.

No. 43 Washburn Avenue. Occupied by H. A. Casson as dwelling. Loss, trifling. Cause, curtain ignited by a lighted lamp.

Wednesday, Aug. 18, 9.30 p. m. Box 36.

Nos. 604-610 Massachusetts Avenue. Occupied by A. H. Smith as provisions. Loss, trifling. Originated in an awning. Cause, electric wires.

Friday, Aug. 20, 8.01 a. m. Box 17.

No. 44 Washington Street. Cause, falling of a building which was being torn down. Alarm needless.

Friday, Aug. 20, 5.35 p. m. Box 134.

No. 32 Tremont Street. Owned by F. S. Adams. Loss, $560. Insurance, $2,800. Occupied by F. S. Adams as dwelling and stable. Loss, $200. Insurance, $1,000. Originated in the stable. Cause, children and matches.

Saturday, Aug. 21, 2.21 p. m. Box 38.

No. 31 Tufts Street. Owned by J. E. Bullard. Loss, $17. Insurance, $2,000. Occupied by Frank Fields as dwelling. Loss, $18. Insurance, $1,000. Cause, lighted lamp igniting bed clothes.

Saturday, Aug. 21, 10.25 p. m. Still.

Sidney Street. Cause, rubbish burning on dump.

Saturday, Aug. 28, 1.15 p. m. Still.

No. 44 Pearl Street. Occupied by D. D. Bemis as dwelling. Cause, smoke mistaken for fire.

Tuesday, Aug. 31, 12.40 a. m. Box 32.

No. 282 Webster Avenue. Owned by Heffernan heirs. Loss, $30. Insurance, $2,000. Occupied by Anna McAloon as grocery. Loss, $50. Insurance, $500. Originated in the cellar. Cause, incendiary.

Tuesday, Aug. 31, 12 m. Box 125.

No. 35 Brookline Street. Occupied by C. E. Childs as dwelling. No loss. Cause, ignition of a bottle of naphtha.

SEPTEMBER.

Thursday, Sept. 2, 7.15 p. m. Still.

No. 103 School Street. Occupied by W. H. Cairns as dwelling. No loss. Cause, upsetting of a kerosene oil lamp.

Friday, Sept. 3, 7.31 a. m. Box 72.

No. 98 Dudley Street. Occupied by Joseph Goodwin as dwelling. No loss. Originated in wood-box behind stove. Cause, unknown.

Saturday, Sept. 4, 12.53 a. m. Box 9.

No. 135 Bridge Street. Owned by Théophile Delisle. Loss, $300. Insurance, $1,300. Occupied by Théophile Delisle as dwelling. Loss, $403. Insurance, $700. Cause, explosion of kerosene oil lamp.

Sunday, Sept. 5, 10.45 a. m. Still.

No. 533 Putnam Avenue. Occupied by W. H. Langdon as dwelling. Cause, smoke mistaken for fire.

Monday, Sept. 6, 11.41 a. m. Box 429.

No. 62 Hampshire Street. Occupied by H. F. Sparrow as confectioner. Cause, accidental automatic alarm.

Monday, Sept. 6, 12.48 p. m. Box 25.

No. 867 Main Street. Owned by F. S. Pratt. Loss, $123. Insurance, $4,835. Occupied by Simon Gerstein as dry goods. Loss, $1,200. Insurance, $3,000. Cause, unknown.

Thursday, Sept. 9, 6.10 p. m. Box 134.

No. 156 Hampshire Street. Occupied by W. M. Barron as dwelling. No loss. Cause, oil in kerosene stove igniting.

Thursday, Sept. 9, 7.30 p. m. Still.

No. 817 Main Street. Owned by Fiske estate. Loss, $31. Insurance, $2,700. Occupied by L. E. Newhall as barber. Loss, trifling. Cause, falling of hanging kerosene oil lamp.

Thursday, Sept. 9, 8.41 p. m. Box 53.

No. 38 Winthrop Street. Owned by L. S. Jones estate as stable. It was of no value. Cause, incendiary.

Saturday, Sept. 11, 11.01 a. m. Box 12.

No. 202½ Bridge Street. Owned by Dooley estate as unoccupied dwelling. No loss. Originated in cellar. Cause, children and matches.

Saturday, Sept. 11, 12 p. m. Box 28.

No. 135 Portland Street. Owned by M. F. Hillery as unoccupied dwelling. Loss, $261. Insurance, $1,000. Cause, incendiary.

Sunday, Sept. 12, 1.45 a. m. Still.

No. 36 Springfield Street, Somerville. Engine Co. No. 5 answered.

Monday, Sept. 13, 1.45 a. m. Still.

No. 433 Cambridge Street. Owned by C. H. Stratton. Loss, $150. Insurance, $3,000. Occupied by John Hall, Jr., as dwelling. Loss, $80. Insurance, $500. Supposed cause, rats and matches.

Tuesday, Sept. 14, 4.33 p. m. Box 46.

No. 19 Bay Street. Occupied by W. E. O'Riley as dwelling. No loss. Cause, oil in gasoline stove taking fire.

Wednesday, Sept. 15, 4 p. m. Box 65.

No. 1722 Massachusetts Avenue. Owned and occupied by Horace Partridge as dwelling. No loss. Originated in stove clothes. Cause, spontaneous combustion.

Monday, Sept. 20, 12.15 p. m. Box 41.

No. 108 Pleasant Street. Owned and occupied by W. W. Tobey as dwelling. No loss. Originated in the cellar. Cause, hot ashes in barrel.

Tuesday, Sept. 21, 11.13 a. m. Box 23.

No. 13 Salem Street. Occupied by John Kelley as dwelling. No loss. Cause, oil in kerosene stove taking fire.

Thursday, Sept. 23, 1.43 p. m. Box 169.

No. 113 Rindge Avenue. Owned by Edmond Dwyer. Loss, $150. No insurance. Occupied by Edmond Dwyer as stable. Loss, $93. Insurance, $100. Originated in hayloft. Cause, unknown.

Monday, Sept. 27, 11.11 a. m. Box 429.

No. 62 Hampshire Street. Occupied by H. F. Sparrow as confectioner. Cause, accidental automatic alarm.

Tuesday, Sept. 28, 2.57 p. m. Box 27.

No. 126 Harvard Street. Owned by heirs of William Black. Loss, $70. Insurance, $1,500. Occupied by several families as dwellings. No loss.

No. 128 Harvard Street. Owned by J. W. Hammond as dwellings. Loss, $20. Insurance, $1,500. Originated on the roof. Cause, sparks.

Wednesday, Sept. 29, 8.50 p. m. Box 25.

No. 875 Main Street. Fruit store. Cause, smoke mistaken for fire.

OCTOBER.

Friday, Oct. 1, 1.14 p. m. Box 78.

No. 25 Tuttle Street. Owned and occupied by Freeman Tuttle as dwelling. No loss. Originated on the roof. Cause, sparks.

Sunday, Oct. 3, 2.17-2.22 p. m. Box 42.

No. 364 River Street. Owned by J. A. Granstsom. Loss, $14. Insurance $500. Occupied by J. A. Granstsom as wheelwright. Loss, $16. Insurance, $1,000.

No. 370. Owned by W. F. Holmes. Loss, $32. Insurance, $1,000. Occupied by J. G. Gritz as carriage painter. No loss.

No. 374. Owned by W. F. Holmes. Loss, $2,600. Insurance, $2,000. Occupied by W. F. Holmes as hay and grain. Loss, $2,400. Insurance, $2,000.

No. 386. Owned by G. H. Rugg. Loss, $4,604. Insurance, $4,700. Occupied by G. H. Rugg as wood and coal. Loss, $1,247. Insurance, $2,500. Originated in manure-bin on the outside of W. F. Holmes building. Cause, unknown.

Monday, Oct. 4, 11.19 a. m. Box 54.

No. 7 Kirkland Street. Owned by S. C. Batchelder. Loss, $470. Insurance, $8,000. Occupied by S. C. Batchelder as dwelling. Loss,

$237. Insurance, $8,000. Originated in roof of L. Cause, sparks from chimney.

Tuesday, Oct. 5, 2.43 p. m. Box 79.

No. 2 Buckingham Place. Owned by R. H. Dana. Occupied by H. H. Markham as school and dwelling. Loss, slight. Cause, gas stove igniting wood-work.

Thursday, Oct. 7, 11.40 a. m. Still.

No. 12 Dunster Street. Occupied by M. P. White as dwelling. No loss. Cause, pan of fat on stove taking fire.

Friday, Oct. 8, 7.27 p. m. Box 35.

No. 28 Elm Street. Occupied by G. A. Russell as dwelling. Loss, slight. Cause, top of lighted match flying amongst clothes.

Saturday, Oct. 9, 6.14-6.22 a. m. Box 431.

No. 82 Crescent Avenue. Owned by A. H. Hews & Co. Loss, $2,200. Insurance, $1,700. Occupied by A. H. Hews & Co. as storehouse. Loss, $1,350.

No. 86. Owned by A. H. Hews & Co. Loss, $2,600. Insurance, $3,000. Occupied by A. H. Hews & Co. as stable. Loss, $700. Insurance, $2,500.

No. 99. Owned and occupied by A. H. Hews & Co. as earthenware manufactory. Loss, $75. Insurance, $18,000.

No. 78-80 Crescent Avenue. Owned by T. H. Locke. Loss, $800. Insurance, $2,000. Occupied by W. G. Sewell as dwelling. Loss, $400. Insurance, $500.

No. 89-91 Raymond Street. Owned by Robert Thompson as dwelling. Loss, $95. Insurance, $3,500. Originated in storehouse. Cause, unknown.

Saturday, Oct. 9, 4.06 p. m. Box 15.

No. 243 Vine Street. Owned by Mary Crowley. Loss, $186. Insurance, $1,000. Occupied by Jennie Thoma as dwelling. Loss, $6. Insurance, $600.

No. 347. Owned by J. H. Gibson as dwelling. Loss, $35. Insurance $1,000.

No. 105 Fourth Street. Owned by Michael McGowan as dwelling. Loss, $50. Insurance, $1,500. Originated in a shed rear No. 243 Vine street. Cause, children and matches.

Tuesday, Oct. 12, 9.12 a. m. Box 162.

No. 17 Bradbury Street. Owned by Charles Moore as dwelling. No loss. Cause, soot in chimney afire.

Thursday, Oct 14, 3.05 p. m. Box 137.

No. 149 Western Avenue. Occupied by G. W. Stacy as dwelling. Cause, smoke mistaken for fire.

Thursday, Oct. 14, 9.45 p. m. Still.

Pearl Street. Electric car afire. Cause, defect in motor.

Thursday, Oct. 14, 10.28 p. m. Box 46.

No. 129 Hancock Street. Owned by J. J. Coffey. Loss, $12. Insurance, $2,400. Occupied by J. J. Coffey as dwelling. Loss, $148. Insurance, $1,000. Cause, incendiary.

Saturday, Oct. 16, 6.48 a. m. Box 24.

No. 4 Watson Street. Occupied by E. B. Jones as dwelling. Loss, $20. No insurance. Cause, top of lighted match flying in curtain.

Saturday, Oct. 16, 7.02 p. m. Box 72.

Harvey Street. Owned by Perry Green as tent. Loss, $200. No insurance. Cause, oil in gasoline lamp taking fire.

Monday, Oct. 18, 7.35 a. m. Still.

No. 13 Magazine Street. Occupied by F. O. Webber as dwelling. No loss. Cause, hot ashes in barrel.

Tuesday, Oct. 19, 9.46 a. m. Box 15.

No. 97 Spring Street. Owned by Thomas Stevenson. Loss, $60. Insurance, $2,000. Occupied by W. F. Ross as dwelling. No loss. Cause, defective fireplace.

Wednesday, Oct. 20, 3.08 a. m. Box 14.

No. 21 Ninth Street. Owned by Charles Linehan. Loss, Insurance, $. Occupied by C. F. Dailey as variety store. Loss, $370. Insurance, $500.

No. 19. Occupied by C. F. Dailey as dwelling. Loss, $500. No insurance.

No. 19. Occupied by William Williamson as dwelling. Loss, $350. Insurance, $500. Originated in variety store. Cause, unknown.

Saturday, Oct. 23, 4.38 a. m. Box 28.

No. 4 Washington Street. Owned by Louisa A. Brusch. Loss, $650. Insurance, $3,000. Occupied by Pasquale Vacarro as barber. Loss, $400. No insurance.

No. 2. Occupied by L. A. Brusch as dwelling. Loss, $275. Insurance, $2,000. Originated in barber shop. Supposed cause, spontaneous combustion of oiled rags.

Tuesday, Oct. 26, 12.18 p. m. Box 28.

No. 164-174 Hampshire Street. Owned and occupied by Geo. G. Page Box Co. Loss, slight. Originated on third floor. Cause, supposed of incendiary origin.

Tuesday, Oct. 26, 6.53 p. m. Box 27.

No. 154 Cherry Street. Occupied by Anna Hunter as dwelling. No loss. Cause, falling of a hanging kerosene oil lamp.

Wednesday, Oct. 27, 7.25 a. m. Still.

No. 68 Second Street. Occupied by Manuel Foster as dwelling. No loss. Originated in wood-box behind the stove. Cause, unknown.

Wednesday, Oct. 27, 11.41 a. m. Box 43.

No. 84 De Wolf Street. Occupied by Patrick Brennan as dwelling. Cause, soot in chimney afire.

Sunday, Oct. 31, 6.26 p. m. Box 15.

Could find no cause for giving the alarm.

NOVEMBER.

Tuesday, Nov. 2, 9.02 p. m. Box 14.

No. 614-618 Cambridge Street. Owned by J. H. McCaffrey. Loss, $16. Insurance, $3,000. Occupied by J. A. Hedin & Co. as furniture. Loss, $50. Insurance, $5,000. Originated in excelsior. Cause, supposed by stepping on a match.

Saturday, Nov. 6, 7.11 a. m. Box 152.

Harvard Street. Old Cambridge Baptist Church. Cause, smoke mistaken for fire.

Sunday, Nov. 7, 1.10 a. m. Box 417.

No. 386 Main Street. Occupied by Ivers & Pond as piano manufactory. No loss. Originated in boiler-room. Cause, sparks from furnace.

Sunday, Nov. 7, 1.33 p. m. Box 136.

No. 1 Austin Place. Occupied by T. F. Morris as dwelling. Loss, slight. Cause, ignition of oil in kerosene stove.

Sunday, Nov. 7, 4.45 p. m. Still.

Portland Street. Owned and occupied by Geo. G. Page Box Co. as lumber-yard. Loss, slight. Originated in a pile of lumber. Cause, set afire by boys.

Wednesday, Nov. 10, 7 p. m. Box 24.

No. 1 Erie Street. Owned by Cohen & Zintz. Loss, trifling. Occupied by Harry Zintz as dwelling. Loss, $125. Insurance, $800. Originated in a bed. Cause, unknown.

Friday, Nov. 12, 5.33 p. m. Box 59.

Massachusetts Avenue. Owned by Harvard University. No loss. Cause, soot in chimney afire.

Wednesday, Nov. 17, 1.30 a. m. Box 8.

Prison Point Street. Owned and occupied by Boston & Maine Railroad Co. as machine shop. Loss, trifling. Cause, spontaneous combustion of oiled waste.

Saturday, Nov. 20, 11.19 a. m. Box 36.

No. 590 Massachusetts Avenue. Occupied by F. E. Osborn as boots and shoes. No loss. Originated in the basement. Cause, overheated furnace pipes.

Saturday, Nov. 20, 4.15 p. m. Still.

No. 27 Winter Street. Cause, smoke mistaken for fire.

Tuesday, Nov. 23, 11.57 a. m. Box 29.

No. 17 Webster Avenue. Owned by P. C. Munroe. Loss, $94. Insurance, $1,500. Occupied by A. J. Porter as dwelling. Loss, trifling. Cause, unknown.

Wednesday, Nov. 24, 12.53 p. m. Box 271.

No. 16 Cameron Street. Owned by E. E. Baldwin as dwelling. Loss, trifling. Cause, hot ashes in box.

Wednesday, Nov. 24, 6.23 p. m. Box 115

Emery Court. Owned by A. E. Emery. Loss, $450. Insurance, $1,000. Occupied by several families as dwellings. No loss. Cause, thawing out water-pipe.

Wednesday, Nov. 24, 9.12-9.18 p. m. Box 15.

Fifth Street. Owned by Tobias Libby & Co. Loss, $1,400. Insurance, $2,500. Occupied by H. K. Libby as stable. Loss, $200. Insurance, $2,000. Occupied by Samuel Small as stable. Loss, $100. Insurance, $1,200. Occupied by J. White & Co. as stable. Loss, $40. Insurance, $1,500. Occupied by G. F. Spencer as stable. Loss, $200. Insurance, $1,000. Originated in the hayloft occupied by H. K. Libby. Cause, unknown.

REPORT OF THE BOARD OF HEALTH

To the Honorable the City Council :—

In compliance with the public statutes creating Boards of Health and defining their duties, we have the honor to make our annual report for the year ending December 31, 1897.

We respectfully call the attention of your honorable body to the following list of complaints investigated and nuisances abated during the year :—

Full, overflowing, and offensive privy vaults	20
Offensive and defective water closets	102
Full and defective cesspools and catch-basins	34
No traps to sinks	55
Leaky and defective traps	46
Defective drainage, open and broken drains	54
Plumbing tests made	68
Filthy yards	170
Filthy stables and cow sheds	7
Manure in yards and lots	21
Wet and damp cellars	25
Stagnant water on premises	18
Dead animals on premises	15
Filthy buildings	14
Filthy cellars	87
New water closets put in	28
Miscellaneous	12
Total	776

Number of inspections made	3,023
Number of subsequent inspections	4,180
Total	7,203

Number of notices issued	157
Slop closets abolished	17
Offal receptacles cleaned	2
Defective plumbing in whole house remedied	10
Privy vaults abolished	52
Cesspools abolished	3
Number of houses placarded	672
Premises disinfected	940
Number of cellars from which hens were removed	16
Number of stables from which pigs were removed	5

Hospital.

At various times during the past years we have called your attention to the need of a hospital for the reception and care of cases of infectious diseases. As we have set forth at length our reasons for the establishment of such hospital, it is unnecessary to restate them.

The legislature has recognized the need of such hospital by the passage of Chapter 511, of the Acts of 1894, "An Act to provide hospital accommodations for the care and treatment of persons suffering from contagious diseases in cities."

It has furthermore by two special acts recognized the particularly pressing need of the City of Cambridge for such a hospital. To meet the difficulty found by the City Council in purchasing land for this purpose, the legislature has, by Chapter 99 of the Acts of 1895, authorized the City of Cambridge to take real estate and lands for the erection and establishment of such hospital, and by Chapter 192 of the Acts of 1897 it has authorized the city to contract with the Cambridge Hospital for enlarged accommodations for the reception of such cases.

Since the passage of the latter act an earnest effort has been made to induce the Trustees of the Cambridge Hospital to make such a contract as is contemplated by that act, but without success. For the reason that the land near the Charles River belonging to the Hospital, which would be the best site for a building for such a purpose, is likely to be taken by the Park Commissioners, and for other reasons, the Trustees of the Cambridge Hospital have declined to enter into such a contract.

An unsuccessful effort has also been made in the direction of a joint hospital with some of the neighboring towns. There is no reasonable probability of any change in the situation in the near future which will make either of these plans feasible. In the meantime the city is being rapidly built up in the few sections where there is available land for this purpose, and the cost at which a site for such a hospital can be acquired is rapidly increasing.

In view both of the present situation and the future, the city has no more pressing need than an adequate hospital for cases of infectious diseases, and we earnestly urge that a site be at once secured and such a hospital established.

Medical Inspection of Schools.

The medical inspection of schools has been continued through the year on the same lines as in the year 1896, a full description of which can be found in our report for that year.

The diseases discovered in the schools during 1897, and the number of cases of each disease is given below : —

Chicken-pox	21
Diphtheria	2
Measles	19
Mumps	8
Pediculosis	53
Phthisis	1
Scarlet fever	4
Whooping-cough	13
Diseases of ear	4
Diseases of eye	28
Diseases of skin	17
All other diseases	42
Total	212

The number reported shows an increase of 41 cases over the number reported in 1896.

Obviously the efficiency of the system will depend largely on the aid given by the teachers of the various schools in calling the attention of the visiting physicians to such pupils as show signs of

indisposition. The ability to recognize these signs must of course vary with the powers of observation of the individual observers. The cases of disease reported from different schools varied as follows: — from 9 schools 1 case was reported in each; from 4 schools 2 cases in each; from 5 schools 3 cases in each; from 4 schools 4 cases in each; from 2 schools 5 cases in each; from 2 schools 6 cases in each; from 1 school 9 cases; from 1 school 11 cases; from 1 school 12 cases; from 1 school 16 cases; from 1 school 19 cases; from 1 school 34 cases; from 1 school 41 cases.

Bacteriology.

During the year 1,242 cultures were examined. The examinations during the various months were as follows: —

January	71	July	97
February	129	August	64
March	96	September	69
April	151	October	90
May	170	November	86
June	99	December	120

The results of the examinations were positive in 379 instances, and negative in 863 instances.

The cultures were examined for the purpose of diagnosis in 528 instances, and for the purpose of determining whether or not the proper time had come for releasing the patient in 714 instances. The diagnosis made by the physicians was verified by the bacterial examinations in 96 cases. In 43 cases the diagnosis of diphtheria made by the physician was not verified by the examinations. In 31 cases shown by the examinations to have been diphtheria the affections had been diagnosticated by the attending physicians as other diseases.

The value of bacterial investigations is becoming more apparent every day. Not in diphtheria alone, but in other diseases also cases are frequently met with by physicians, whose diagnosis is impossible, or at best a mere guess, without the aid afforded by the investigations of the bacteriologist.

Bacterial examinations; daily medical inspection of the pupils in the public schools; the supervision of cases of certain infectious diseases, and the certification for the return to school of pupils who have had, or have been exposed to those diseases, by the medical officer of this board, are in our opinion measures most efficacious in controlling the spread of these diseases, and together constitute a system of protection of the public health, which no city or town, which has once experienced the benefits accruing therefrom, would ever willingly relinquish.

Ice.

The report on ice made to us by the Inspector of Milk shows that the conditions, fraught with danger to the health of the community, which existed a year ago, and on which we commented at length in our report for 1896, still continue in existence.

The following Ordinance is therefore, in our opinion, a wise one, and one justified by the facts.

AN ORDINANCE REGULATING THE SALE AND DELIVERY OF ICE.

The ordinance is as follows:—

Be it ordained by the City Council of the City of Cambridge as follows:

SECTION 1. Every person, firm or corporation before selling or delivering ice in this city after the first day of February, A. D. 1898, shall prior to such sale or delivery register at the office of the Board of Health the name and location of the body or bodies of water from which said ice so to be sold or delivered has been cut, or from which the water has been taken for its manufacture. Such registration shall be subscribed and sworn to by the person so proposing to sell or cause to be delivered said ice, or in the case of a firm, by one of the members of the firm, or in the case of a corporation, by the president, general manager or one of the board of directors of the corporation.

SECTION 2. Every person, firm or corporation who sells, delivers or causes to be delivered ice in this city after the first day of February, A. D. 1898, shall permit the Board of Health and its inspectors at all reasonable times to have access to and freely examine the ice intended for such sale or delivery, and shall permit samples to be taken by said Board or its inspectors for the purpose of analysis.

SECTION 3. The Board of Health shall investigate the sources of supply of ice so sold or delivered and cause inspection and analysis to

be made of the ice from said sources. And if upon such investigation, inspection and analysis and upon hearing, it shall deem and adjudge ice derived from any source to be impure and injurious to the public health, it may prohibit the sale or delivery in this city of such ice or of any other ice which has been intermingled with ice from such source. Notice of such prohibition shall be given in the manner provided by law for giving notice of the regulations of the Board of Health, and such notice shall be deemed legal notice to all persons.

Section 4. Any person, firm or corporation after the first day of February, A. D. 1898, who shall sell or deliver or cause to be sold or delivered or shall have in his, their or its possession with intent to sell or deliver in this city ice, the source of which has not been registered as above provided, or ice the sale and delivery of which has been prohibited and notice thereof given as above provided, or who shall violate any of the provisions of section two of this ordinance, shall be liable to a penalty not exceeding twenty dollars for each offence.

In Common Council, Dec. 28, 1897. Passed to be ordained.

ALBERT S. APSEY,
President.

In Board of Aldermen, Dec. 28, 1897. Passed to be ordained.

RUSSELL BRADFORD,
President.

Executive Department, Dec. 29, 1897. Approved.

ALVIN F. SORTWELL,
Mayor.

A true copy. Attest:

EDWARD J. BRANDON,
City Clerk.

Undertakers.

The duty of issuing licenses to undertakers has by Section 7, Chapter 437, Acts of 1897, been transferred to Boards of Health.

[Acts of 1897, 437, Section 7.]

"Sect. 7. The boards of health of cities and towns shall, on or before the first day of May in each year, license a suitable number of undertakers who can read and write the English language, to take charge of the funeral rites preliminary to the interment, removal or cremation of a human body. Such licenses shall be issued under such terms and upon such conditions as the board of health may prescribe,

and may be revoked at any time by the board when such terms or conditions or any requirements of law relative thereto have been violated by the undertaker; provided, however, that an undertaker so licensed shall have the right to act thereunder in any city or town in the Commonwealth."

Spitting in Street Cars.

With a view to the abatement of the dangerous and filthy practice of spitting in street cars, a practice confined almost entirely to men, the board at a meeting held July 28, passed the following regulation: —

"The Board of Health of this city hereby adjudges spitting in street cars to be a public nuisance, source of filth and cause of sickness, and prohibits such spitting upon the floor, platform, or any other part of any street car."

Garbage Disposal.

The best method for the disposal of the animal and vegetable waste of households is a subject that has occupied the attention of various municipal authorities for a considerable time, as it is becoming more apparent every day that the crude and offensive methods now in use must soon give way to others more in accordance with the requirements of modern sanitation. In this connection we feel that we cannot do better than call your attention to the conclusions arrived at by the Committee on Garbage Disposal of the American Public Health Association. This Committee, composed of experts, was appointed some years ago, and, after a very complete investigation of the subject in this country and abroad, presented its report to the Association at the annual meeting of that body held in Philadelphia in October of the present year.

"The subject upon which your committee was requested to make a report concerns the collection and disposal of the solid waste matter in cities, such as garbage, ashes, manufacturing refuse, etc. This branch of municipal work had heretofore not received satisfactory attention. There was much diversity of opinion regarding the proper methods to be pursued, and a basis upon which safe judgment could be founded did not as yet appear to exist.

In order to gather the needed information, circulars containing numerous questions were prepared and sent to 170 cities of the United States and Canada. The existing literature of the day was examined and visits of inspection were made, as was convenient, to the most important and instructive works of both Europe and America. By classifying, comparing and critically studying the information thus obtained, it became practicable to throw some useful light on the subject and to enable your committee to reach conclusions.

The collection and disposal of garbage and refuse must be considered:

First, from a sanitary, and secondly, from a financial aspect.

Satisfaction must be given in both respects; otherwise, as previously reported, the result will not be successful. 'There may be a disposal which is entirely proper in a sanitary way, yet the expense may be so great that the method precludes general adoption. On the other hand, some cheap method of disposal may not comply with sanitary requirements, and can also not be recommended.'

The solution of the problem depends upon the character and composition of the matter to be dealt with, upon the quantity to be handled, upon the necessary transportation to the place of disposal, upon the character of organization in charge of the work, and upon the ultimate disposition to be made of the material.

The best method of disposal will vary according to what can or must be done with the material. When it contains matter that may be converted into useful products its disposition might properly differ from that which is necessary when it must be destroyed in a manner to prevent a nuisance or injury to health. Such utilization, when practicable, must be secondary in importance to a proper sanitary disposition. If the cost of disposal can be reduced by converting a part or the whole of the material into salable products, then utilization may be advocated for financial reasons, but only with the provision that a sanitary danger or nuisance is not created.

The best method of disposal when the quantity of material is small may also be different from when it is large; it will also depend upon whether it must be transported to a great distance or can be disposed of near the point where it is collected.

The questions of collection and disposal are, therefore, somewhat complex. From the variety of conditions which may govern the case, it will be seen that proper answers can only be given when the special conditions existing in each city or town are known. In the opinion of your committee no single system of disposal can be recommended as being the best under all conditions.

The terms garbage and refuse were defined by the Committee as follows: By *garbage* is meant animal and vegetable waste matter subject to rapid decay, and collected from kitchens, markets, slaughter-houses, etc., but not including night soil or street sweepings. By *refuse* is meant the miscellaneous material comprising the dry waste matter from houses, stores, factories and streets, such as ashes, paper, straw, wood, rubbish, etc.

COLLECTION AND REMOVAL TO PLACE OF DISPOSAL.

The committee has found that in comparatively few places was there a careful and wise consideration given to the character of utensils, receptacles, carts, or wagons in which the refuse and garbage is collected. In most cases these articles are left to the judgment of house occupants or of contractors who collect the material.

No general recommendations can be given with reference to the character of the receptacles and wagons, because they should vary according to local conditions, and with the climate and method of final disposal.

In cold countries, for instance, metal receptacles are not advantageous in the winter months, and wooden receptacles are preferred. The reverse is the case in hot climates.

In all cases, however, they should be covered with a lid, and where cities give any directions at all with reference to these receptacles, this requirement is usually stated.

Carts or wagons should be made of special design to suit the special conditions. Whether the garbage and refuse are collected in the same carts and wagons, or whether there is a separate collection, these carts and wagons should be covered. They should be covered with lids that can be easily opened and also firmly closed. They should be constructed of such a shape that they can be easily and completely emptied of all their contents.

Regarding the frequency of collecting garbage and refuse, there seems to be no uniformity of practice, even in cities similarly situated. In some cases garbage proper is collected daily during the summer months; in most cases, however, but two or three times a week. Often the collection is more frequent in the densely populated portions than in the suburban districts of the city.

It is the opinion of your committee that no difference should be made with reference to the density of population. Readily decomposing material should be removed as soon as possible after it has been offered for collection, as it will become odorous and objectionable equally soon in the suburbs as in the centre of the city. Decomposition is a question of time, not of locality. The frequency of collection should, therefore,

depend on the season. It should, if possible, be collected daily in hot weather, at least three times a week in spring and fall, and not less than twice a week in cold weather.

If garbage is collected daily, no decomposition should take place. Where it is collected less often in warm weather it is recommended that the receptacles, carts, wagons, etc., be disinfected, and, if practicable, washed every time after they have been used. When garbage and dry refuse are removed together the frequency of collection should be the same as though it were all garbage.

DISPOSAL BY COMMUNITIES.

In this case it becomes practicable either to combine all the various rejected materials, or to keep them separated. A choice between the two methods will depend upon the local conditions and customs. In many cities, in nearly every European city, the garbage and dry refuse, including ashes, are all mixed, removed and disposed of together. In American cities they are combined in some cases and in others a separation of some of the material is made. Your Committee is not able to state that either one or the other method is to be preferred in all cases. There may be instances where a separation is better, and there may be others where the combined removal offers less difficulties and is less expensive.

a. Separate Removal.— The fact that domestic garbage contains a fair percentage of grease, and that the remaining material may be converted into a fertilizer, has caused the development of processes in this country for converting garbage into these two materials, to be sold at a profit. Such a method of disposal is applicable only in large cities. The works, which must be erected for this treatment of garbage, can only be profitable if large quantities are handled. Such works have been erected in a number of cities in the United States. Companies were formed, and the work was undertaken with the expectation of conducting a very profitable business. Experience has demonstrated, however, that in many instances there was no profit, and in others that it was small. It has heretofore been found impracticable to conduct the works so that a nuisance would be wholly prevented, and it was therefore found best to locate them at points where an occasional nuisance would not be objectionable. After several year's operation a number of these works have been abandoned, because under the necessary sanitary restrictions they were not found to be remunerative.

From a sanitary point of view or as regards the creation of a nuisance, this process of disposing of garbage should be viewed with some suspicion. It should be allowed, and, in the opinion of your Commit-

tee, is only justifiable when the works are so located that a nuisance cannot possibly be created and when it is also found to be cheaper to the community than cremation.

Experience has shown that in many cases this reduction process does not dispose of all the offensive material, and that it must be operated in conjunction with the cremation process, because some of the material collected with the garbage will neither yield grease nor make a good fertilizer, and is best disposed of by burning.

The latest and largest works for disposing of garbage by the reduction process have been built on Barren Island, where the garbage of New York and Brooklyn is being treated. Contracts for this treatment were made within the last year or two, and it appears, at the present time, that the history of these works may possibly not differ much from the history of others. In this case, however, the distance from inhabited sections and the great quantities of material to be handled offer more favorable conditions for success than in most other cities. As the selling price of both the grease and the fertilizing residue has been steadily declining, it may probably be safely inferred that the profit of the reduction business does not meet the early expectations.

When the garbage is collected separately from the other refuse, then there remains another method for its disposal, which receives the commendation of your committee, namely, cremation.

When garbage is separately collected it contains from 50 to 80 per cent of moisture. This fact has made its burning difficult. There is insufficient combustible material contained in the same to evaporate the large quantity of moisture contained in fresh garbage while burning up itself. For this reason it has been necessary to add coal to supply the heat in most of the American furnaces. They are nearly all so constructed that the wet material is thrown directly upon the grate-bars. In the English furnaces the garbage and refuse are first thrown into an ante-chamber where the material is dried before it reaches the grate-bars. Your Committee is not aware of the existence of a furnace constructed after the English pattern where garbage alone, without the addition of rubbish, ashes and cinders, has been consumed. It is, therefore, not in a position to state the actual results that would be found if garbage alone were burned in an English furnace. It seems, however, in view of the evidence before the Committee, that it might possibly be found economical to subject garbage to a drying process before it is thrown upon the grate-bars. With moderately wet garbage and suitably arranged apparatus it seems possible that the combustion might be effected with less coal than is now generally used. No intelligent experiments in this direction have, however, come to the attention

of your Committee, and no definite statement as to the economy of such a process can be given.

Besides the reduction of the kitchen garbage to grease and fertilizer, or its cremation, your Committee is not able to designate any process by which the garbage of communities can be finally disposed of either economically or in a sanitary manner.

If the garbage is disposed of separately, there results the necessity of a separate disposal of the remaining material, consisting of ashes, cinders, rubbish and dry combustible matter. Ashes and incombustible refuse can be safely wasted or dumped for filling in low grounds. Dry combustible matter, of which large cities usually furnish a considerable amount, is best disposed of by being burned in a crematory.

Your Committee feels compelled to state, with reference to the disposal of these materials, that a separation does not seem to be economical or advisable, unless the conversion of garbage into salable products is an assured profitable business. It has not so been found in the larger cities of Europe, and separation is not there practiced.

b. Combined Removal.—When no separation is made of the various waste materials and all are collected together, there is, in the opinion of your Committee, but one way in which the final disposal should be accomplished; namely, by cremation. This is the system successfully adopted under these circumstances in many cities of Europe, and is growing in favor every year. In England the burning of city garbage and refuse has been practiced in some cities for half a century. Considerable experience has, therefore, been gained regarding the most suitable construction of the furnaces and the manipulation of the material.

Within the last two years extensive experiments have been made in the cities of Hamburg and Berlin on the subject of garbage and refuse cremation, as already stated. The results there obtained with garbage that contains less combustible matter than the English, and still less than the American garbage and refuse, indicates without any doubt that a destruction of this material by fire can be an economical process besides offering a thoroughly sanitary solution to the garbage question.

The European furnaces have not yet been introduced in America. Within a few years, however, a furnace, resembling the English pattern, but apparently less efficient, has been erected in Montreal. The experience gained with it has been fairly satisfactory. The garbage and ashes are mixed, and they burn without the addition of fuel. It is found necessary, however, as was also found necessary in some cities of Europe, to sift the material and thus to free it from the fine ashes, which choke the fires.

Garbage in America contains more moisture than that in Europe, and this fact has made it appear as though cremating would not be as successful in this country, but your Committee has reason to believe that the additional quantity of combustible material usually contained in the average American garbage more than compensates for this additional moisture, when the dry refuse and garbage are mixed. Without having a proper analysis at our disposal, we may say that to the eye there is no apparent difference in this respect between the mixed garbage and refuse of Europe and that of America.

In view of the results obtained during many years in England and lately obtained also in Germany, there appears to be no reason why the same method of disposal, under the above-mentioned limitations and conditions, should not be applicable in this country, by using properly constructed furnaces and having efficient workmen, thereby effecting a destruction of the material in a more sanitary way and probably also more economically than by other methods that have been tried.

The experience and results now before your Committee indicate that the English pattern of cell furnaces with sloping ante-chambers for a preliminary drying and heating of the garbage give more economical results than the large and level American furnaces.

It also plainly indicates that a skilful construction of the entire plant, and a skilful operation, requiring special training of the firemen, are prime requisites to obtaining successful results."

We wish to call your attention to the vital statistics on the following pages. The general death-rate for 1897 is, with the exception of the years '59, '66, '67, '69, '79, '90, the lowest on record since 1849.

E. EDWIN SPENCER,
CHARLES HARRIS,
ADDISON C. BURNHAM,
} *Board of Health of the City of Cambridge.*

OFFICE OF THE BOARD OF HEALTH,
CITY HALL, December 31, 1897.

To the Honorable the City Council:—

This Board herewith respectfully submits its annual financial statement, it being for the year ending November 30, 1897:—

Amount appropriated for Health Department		$17,500 00
AMOUNT EXPENDED.		
Advertising	$13 10	
Ambulance (cost of running)	184 65	
Bacteriological examinations	968 00	
" , laboratory supplies . . .	92 92	
Burial of animals	84 00	
Car tickets	450 00	
Care of patients at Cambridge Hospital . .	1,879 60	
Care of patients at Cottage Hospital (small-pox)	1,107 90	
Carriage hire	60 41	
Chemicals	157 35	
Copy holder	2 00	
Directories	8 00	
Disinfecting (paid City of Boston) . . .	180 00	
" (formaldehyde lamps) . . .	58 05	
Expressing	4 73	
Files	6 60	
Furniture (book-case)	14 00	
Harness (repairs), canvas bags, etc. . . .	25 39	
Horse board	600 00	
" shoeing, etc.	61 00	
Indexing and stenographic work	142 99	
Inspection of milk supply	2 00	
Legal services	211 00	
Medical services	45 00	
Printing and postage	346 86	
Amounts carried forward	$6,705 55	$17,500 00

Amounts brought forward	$6,705 55	$17,500 00
Public urinals (care of)	832 59	
Public urinals (tools, disinfectants and maintenance	29 85	
Services of Medical Inspector and Physician to board	3,000 00	
Services of Clerk	1,200 00	
" " Executive Agent	589 49	
" " Sanitary Inspectors	1,635 00	
" " Drivers	1,256 00	
" " Special Policemen	100 00	
Service of notices	45 56	
School Inspection (services of physicians) .	1,286 17	
" " (supplies)	3 00	
Signs	6 30	
Stationery	88 71	
Telephone	180 00	
Van repairs and maintenance	97 79	
Vaccine points	3 34	
Total expenditures		17,059 35
Balance of appropriation unexpended .		$440 65

By direction of the Board of Health,

JAMES B. SOPER,
Clerk.

VITAL STATISTICS.

Death rate, per 1000 living, from all causes.

1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.
19.64	19.17	17.05	19.24	19.44	20.89	19.56	18.40	18.73	17.63

There were reported during the year 1,531 deaths, excluding the deaths of non-residents occurring in the city, and including the deaths of residents wherever they occurred.

The mean annual death rate for the ten years 1888 to 1897 inclusive, was 18.95.

Scarlet Fever.

Cases Reported.

Ward.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
1.....	6	6	3	5	0	4	0	0	3	8	1	2	38
2.....	0	1	0	7	13	8	3	3	2	6	3	3	49
3.....	0	1	0	0	2	2	3	2	7	9	1	5	32
4.....	8	6	4	4	4	4	7	7	2	0	5	3	54
5.....	7	7	6	9	4	10	4	2	0	2	5	2	58
Total.	21	21	13	25	23	28	17	14	14	25	15	15	231

The reported cases of scarlet fever show an increase of 33 over those reported in 1896.

Ward 1 shows an increase of 17 cases.

Ward 2 shows an increase of 25 cases.
Ward 3 shows an increase of 21 cases.
Ward 4 shows an increase of 4 cases.
Ward 5 shows a decrease of 34 cases.

The reported cases give a morbidity of 2.66 per 1,000 persons living, and a fatality of 4.32 per cent.

Number of Cases Reported Weekly.

Week ending	Cases.	Week ending	Cases.
January 2	8	July 3	7
" 9	7	" 10	8
" 16	6	" 17	1
" 23	4	" 24	4
" 30	4	" 31	0
February 6	7	August 7	6
" 13	7	" 14	3
" 20	5	" 21	3
" 27	2	" 28	2
March 6	6	September 4	3
" 13	0	" 11	1
" 20	3	" 18	4
" 27	2	" 25	5
April 3	6	October 2	3
" 10	5	" 9	5
" 17	7	" 16	5
" 24	1	" 23	5
May 1	11	" 30	4
" 8	8	November 6	6
" 15	2	" 13	4
" 22	4	" 20	2
" 29	7	" 27	2
June 5	10	December 4	3
" 12	8	" 11	1
" 19	5	" 18	7
" 26	2	" 25	4

Age and Sex Distribution of 226 Cases.

Age.	Males.	Females.	Persons.
0- 1 Year	1	2	3
1- 2 Years	6	4	10
2- 3 "	9	10	19
3- 4 "	14	9	23
4- 5 "	17	12	29
5-10 "	38	49	87
10-15 "	14	16	30
15-20 "	5	3	8
20-30 "	8	7	15
30-40 "	0	2	2
Total	112	114	226

Death Rate per 1000 Living.

1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.
0.33	0.10	0.14	0.13	0.22	0.87	1.27	0.20	0.07	0.11

Morbidity, or Sick Rate, per 1000 Living.

2.26	1.70	2.69	4.90	5.01	8.84	11.37	3.59	2.35	2.66

Fatality, or Case Death Rate, Percentage.

15.4	6.03	5.29	2.82	4.54	9.85	11.2	5.80	3.03	4.32

The mean annual death rate for the ten years recorded above was 0.34.

The mean annual morbidity for the same period was 4.57.

The mean annual fatality for the same period was 6.82.

Diphtheria.

Cases Reported.

Ward.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.	Total.
1.....	7	9	4	3	2	0	2	2	0	2	5	5	41
2.....	11	11	3	11	4	7	2	10	2	9	13	12	95
3.....	9	2	7	9	1	4	0	4	2	2	3	0	43
4.....	11	10	11	13	9	8	3	2	2	10	11	13	103
5.....	4	2	1	1	6	4	5	2	5	1	4	4	39
Total.	42	34	26	37	22	23	12	20	11	24	36	34	321

The reported cases of Diphtheria show a decrease of 134 cases from those reported in 1896.

Ward 1 shows a decrease of 34 cases.

Ward 2 shows a decrease of 3 cases.

Ward 3 shows a decrease of 105 cases.

Ward 4 shows an increase of 12 cases.

Ward 5 shows a decrease of 4 cases.

The reported cases give a morbidity of 3.69 per 1,000 persons living, and a fatality of 15.88 per cent.

Number of Cases Reported Weekly.

Week ending	Cases.	Week ending	Cases.
January 2	4	July 3	8
" 9	10	" 10	2
" 16	4	" 17	2
" 23	13	" 24	0
" 30	12	" 31	2
February 6	7	August 7	3
" 13	8	" 14	6
" 20	6	" 21	4
" 27	14	" 28	5
March 6	6	Septem'r 4	6
" 13	7	" 11	1
" 20	6	" 18	4
" 27	3	" 25	1
April 3	8	October 2	1
" 10	6	" 9	3
" 17	11	" 16	9
" 24	8	" 23	8
May 1	9	" 30	4
" 8	3	Novem'r 6	8
" 15	5	" 13	7
" 22	4	" 20	6
" 29	11	" 27	10
June 5	7	Decem'r 4	8
" 12	7	" 11	8
" 19	4	" 18	10
" 26	2	" 25	4

Age and Sex Distribution of 312 Cases.

Age.	Males.	Females.	Persons.
0- 1 Year.....	3	2	5
1- 2 Years.....	7	11	18
2- 3 "	14	12	26
3- 4 "	25	21	46
4- 5 "	16	15	31
5-10 "	48	43	91
10-15 "	14	26	40
15-20 "	11	9	20
20-30 "	6	14	20
30-40 "	2	7	9
40-50 "	0	3	3
50-60 "	1	1	2
60-70 "	0	1	1
Total.....	147	165	312

Death Rate per 1000 Living.

1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.
1.07	1.63	0.52	0.22	0.75	0.53	0.76	1.29	0.73	0.58

Morbidity, or Sick Rate, per 100 Living.

3.36	5.16	2.24	1.59	1.74	1.33	2.24	7.27	5.40	3.69

Fatality, or Case Death Rate, Percentage.

26.5	29.3	20.3	13.	37.8	36.8	32.5	17.8	13.6	15.88

The mean annual death rate for the ten years recorded above was 0.80.

The mean annual morbidity for the same period was 3.40.

The mean annual fatality for the same period was 24.34.

Of the reported cases 19 were of that form called Membranous Croup. Of these 19 cases, 11 died, a fatality of 57.89 per cent.

The fatality of the remaining 302 cases, those reported as Diphtheria, was 13.24 per cent.

Typhoid Fever.

Cases Reported.

Ward.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
1	2	2	0	0	1	0	0	1	1	3	2	1	13
2.....	0	1	1	0	0	4	0	4	6	11	3	5	35
3.....	0	0	0	0	0	0	1	1	2	1	0	1	6
4.....	0	2	0	1	5	0	2	4	2	2	3	5	26
5.....	3	0	0	0	1	2	2	0	4	7	4	2	25
Total	5	5	1	1	7	6	5	10	15	24	12	14	105

The reported cases of Typhoid Fever show a decrease of 150 cases from those reported in 1896.

Ward 1 shows a decrease of 21 cases.

Ward 2 shows a decrease of 34 cases.

Ward 3 shows a decrease of 19 cases.

Ward 4 shows a decrease of 63 cases.

Ward 5 shows a decrease of 13 cases.

The reported cases give a morbidity of 1.20 per 1,000 persons living, and a fatality of 10.47 per cent.

In 98 cases the day when the sick person was first confined to bed has been ascertained, and allowing two weeks for the incubation period, the average time, the number of cases contracted in the different months was as follows : —

November,	1896	2	cases
December,	"	2	"
January,	1897	5	"
February,	"	1	"
April,	"	6	"
May,	"	4	"
June,	"	5	"
July,	"	11	"
August,	"	9	"

September, 1897	27	cases
October, "	10	,,
November, "	14	"
December, "	2	"

Age and Sex Distribution of 95 Cases.

Age.	Males.	Females.	Persons.
2– 3 Years	1	0	1
4– 5 "	0	1	1
5–10 "	6	0	6
10–15 "	9	6	15
15–20 "	3	6	9
20–30 "	25	13	38
30–40 "	10	5	15
40–50 "	5	2	7
50–60 "	1	2	3
Total	60	35	95

Death Rate per 1000 Living.

1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.
0.41	0.36	0.24	0.22	0.20	0.20	0.29	0.14	0.35	0.12

Morbidity, or Sick Rate, per 1000 Living.

2.50	2.94	1.08	0.97	1.07	1.20	1.50	1.31	3.03	1.20

Fatality, or Case Death Rate, Percentage.

15.7	13.5	25.0	22.8	18.7	17.3	17.5	11.2	11.7	10.47

The mean annual death rate for the ten years recorded above was 0.25.

The mean annual morbidity for the same period was 1.68.

The mean annual fatality for the same period was 16.38 per cent.

Measles.

Cases Reported.

Ward.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1.....	40	30	18	12	10	5	3	3	1	0	0	0	122
2.....	36	18	15	3	13	10	0	0	0	2	0	0	97
3.....	10	2	1	1	0	1	0	0	0	0	0	1	16
4.....	11	10	9	13	40	47	8	0	0	0	1	0	139
5.....	3	6	18	3	1	1	0	1	2	1	0	0	36
Total	100	66	61	32	64	64	11	4	3	3	1	1	410

The reported cases of Measles show an increase of 182 over those reported in 1896.

Ward 1 shows an increase of 37 cases.

Ward 2 shows an increase of 51 cases.

Ward 3 shows a decrease of 38 cases.

Ward 4 shows an increase of 108 cases.

Ward 5 shows an increase of 24 cases.

The reported cases give a morbidity of 4.72 per 1,000 persons living, and a fatality of 0.73 per cent.

Age and Sex Distribution of 405 Cases.

Age.	Males.	Females.	Persons.
0- 1 Year.....	5	6	11
1- 2 Years.....	10	20	30
2- 3 "	11	13	24
3- 4 "	18	15	33
4- 5 "	13	20	33
5-10 "	89	94	183
10-15 "	11	13	24
15-20 "	9	14	23
20-30 "	7	32	39
30-40 "	1	3	4
50-60 "	0	1	1
Total.....	174	231	405

Small-Pox.

There were two cases of Small-pox during the year. Cornelius Ramsay, aged 44 years, was exposed in the early part of May to a case of Small-pox in the house in which he lodged at East Boston. After the exposure he was vaccinated, probably for the first time. Shortly afterwards, feeling ill, he came to Cambridge to stay with his sister, who kept a boarding and lodging house on Prospect Street near Central Square. He soon developed a severe case of Small-pox, was removed to the Cottage Hospital, and died there June 2.

Annie Ramsay, sister of Cornelius, aged 42 years, who had taken care of him prior to his removal to hospital, had been vaccinated in childhood, and was revaccinated as soon as the nature of her brother's disease was known. Nevertheless she contracted the disease, was removed to the hospital, and died there June 19.

Every precaution was taken to check the spread of the disease by means of vaccination, isolation, disinfection of premises and destruction of articles that had been exposed to infection. The adoption of any less stringent measures might have resulted in precipitating upon the city an epidemic of this loathsome and fatal disease.

Death Rate per 1000 Living.

	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897
Cancer	0.53	0.64	0.67	0.72	0.56	0.60	0.59	0.77	0.64	0.53
Diarrhœal Diseases	2.26	1.79	1.82	1.92	2.04	1.64	2.14	1.69	2.35	2.18
Measles	0.03	0.17	0.01	0.11	0.02	0.14	0.00	0.03	0.06	0.03
Phthisis	2.50	2.63	2.49	2.73	2.69	2.76	2.08	2.22	2.30	2.26
Whooping-cough	0.36	0.19	0.18	0.16	0.14	0.20	0.43	0.13	0.21	0.19
Bronchitis	0.72	0.72	0.68	0.76	0.87	0.85	0.65	0.50	0.70	0.62
Pneumonia	1.74	1.35	1.52	1.65	1.45	2.06	1.41	1.40	1.90	1.18

The mean annual death rate for the ten years recorded above was of cancer 0.62 ; of diarrhœal diseases 1.98 ; of measles 0.06 ; of phthisis 2.46 ; of whooping-cough 0.22 ; of bronchitis 0.70 ; of pneumonia 1.56.

The death rate of diarrhœal diseases was the only one of those recorded above showing an excess over the mean annual rates for the ten years, 1888–1897.

The male death rate from phthisis in 1897 was 2.45 ; the female was 2.09. This corresponds with observations made in other places which go to show that the female death rate from this disease has fallen below that of the male.

Return of Deaths (Non-Residents Omitted).

Age and Sex Distribution.

Age.	Males.	Females.	Persons.
0- 1 Year	216	175	391
1- 2 Years	43	54	97
2- 3 "	21	23	44
3- 4 "	20	17	37
4- 5 "	14	8	22
5-10 "	35	16	51
10-15 "	11	15	26
15-20 "	14	30	44
20-30 "	65	67	132
30-40 "	67	53	120
40-50 "	42	52	94
50-60 "	68	57	125
60-70 "	74	64	138
70-80 "	48	76	124
Over 80 "	31	55	86
Total	769	762	1,531

Monthly Distribution.

January	126	July	162
February	116	August	167
March	121	September	130
April	145	October	119
May	105	November	112
June	115	December	113

Causes.

Bronchitis	54
Pneumonia	103
Cancer	46
Cerebro-spinal Meningitis	20
Cholera Infantum	103
Diarrhœa and Cholera Morbus	83
Dysentery	4
Diphtheria and Croup	51
Erysipelas	4
Fever, Malarial	1
Fever, Scarlet	10
Fever, Typhoid	11
Glanders	1
Influenza	19
Measles	3
Phthisis	197
Puerperal Septicæmia	2
Small-pox	2
Sun-stroke	3
Whooping-cough	17
Diseases of Brain and Spinal Cord	181
Diseases of Heart	100
Diseases of Kidneys	70
Accident	39
Homicide	1
Suicide	8
Unknown and ill-defined	161
All other causes	237
Total	1,531
Still Births	98

Annnal Death Rates from all Causes per 1000 Living.

Age.	Males.	Females.	Persons.
All Ages.....	18.15	17.13	17.63
0- 1 Year.....	224.76	185.38	205.24
1- 2 Years.....	81.59	101.88	91.76
2- 3 "	21.60	22.97	22.30
3- 4 "	22.98	18.68	20.78
4- 5 "	15.45	9.21	12.40
0- 5 "	74.12	65.13	69.61
5-10 "	9.13	4.10	6.59
10-15 "	3.19	4.41	3.79
15-20 "	3.41	7.53	5.44
20-30 "	6.32	6.63	6.47
30-40 "	9.87	7.52	8.67
40-50 "	9.31	10.29	9.83
50-60 "	23.81	16.82	20.02
60-70 "	48.08	31.20	38.44
70-80 "	78.81	78.59	78.68
Over 80 "	177.14	168.19	171.31

A consideration of the foregoing table will show what value can be attached to a comparison of the general death rates of different places, the age and sex distribution of whose population is unknown.

A Review of the Deaths, and Death Rates from Certain Diseases, for the Ten Years, 1881-1890 — General Remarks.

Table 1 gives the numbers of deaths of all persons (P), and also of males (M) and females (F) respectively, at all ages and at certain age periods, from all causes, and from certain diseases and groups of diseases. It also gives the number of marriages, of live-births and of still-births for the above mentioned years. Marriages performed in Cambridge in which both contracting parties were non-residents have been excluded. All births occurring in Cambridge have been included, irrespective of the legal residence of the parent or parents.

Table II gives the death rates of all persons (P), and also of males (M) and females (F) respectively, at all ages and at certain age periods, for all causes, and for certain diseases and groups of diseases. It also gives the marriage rate; and likewise the birth rates for M, F and P, respectively, and the proportion of still-births in births of M, F and P. Much importance should not be attached to small fractional differences. The table should be viewed as a sketch wherein the broad features are of greater importance than minute details.

All Causes. — At all ages the male rate exceeds the female. Under 1 year the general rate is excessive, the male rate especially. From this period both decline till at 3–4 they fall below the rates at all ages, and remain below, the male till 50–60, the female till 60–70, after which they both rise rapidly, reaching a level approaching that from which they started. The female rate exceeds the male rate at 1–3 and 5–40. Between birth and five years the general rate is very high.

In the report of the Registrar General for the ten years 1881–1890, the death rates of children under 5 years of age are given for 602 places in England and Wales (excluding London). In only 19 of these places is the Cambridge rate for the same age period and the same ten years exceeded. London is returned in 29

divisions of which number the rates exceed that of Cambridge in 12 instances.

Cancer. — At all ages the female rate is nearly double that of the male. Both reach their maximum at 70–80. After this period both fall, the male more abruptly than the female.

Cerebro-Spinal Meningitis. — This calls for no particular comment. It is probable that some deaths should be credited to this cause which are certified as due to "Cerebral Meningitis," "Spinal Meningitis," and "Meningitis."

Consumption. — At all ages the female rate is a little in excess of the male. From 5–10 the male rate rises steadily to 20–30, declines to 50–60, then rises to its maximum at 70–80.

The female rate reaches its maximum at 20–30, then falls to 60–80, during which period it rises, and then falls abruptly after 80.

Diarrhœal Diseases. — The excessive rates of both sexes in the first year of life are striking. They are not equalled by any other cause of death at any age. The high rates over 80 show Diarrhœa to be a frequent accompaniment of death at advanced ages in both sexes.

Diphtheria. — At all ages the male rate is a little higher than the female. Under 1 the male rate is more than double that of the female, while at the period 1–3 the female exceeds the male, the male again passing above the female during 3–5. The rate of both sexes attains its maximum in the second year of life.

Scarlet Fever. — At all ages the male and female rates are nearly identical, and also at the age period 1–2. As in diphtheria, so here, the second year of life is the time when both rates are at their highest. At 3–4 there is quite a rise in the female rate over that of the immediately preceding period, and it is also markedly above the male rate of the same age period. After 5 years both rates are low.

Typhoid Fever. — At all ages the two rates are about the same. At the various age periods there are, however, considerable differences. Under 5 the female rate is in excess of the male. After 10 the female rate rises abruptly in the next age period and attains its maximum at 15–20, a maximum not reached by the male at any age period. After 20 the female rate falls rather rapidly till

TABLE I.

CAMBRIDGE, MASS., 1881—1890, INCLUSIVE.

TOTAL DEATHS.

		All Ages.	0-1	1-2	2-3	3-4	4-5	0-5	5-10	10-15	15-20	20-30	30-40	40-50	50-60	60-70	70-80	Over 80
All Causes	M..	5,724	1,563	385	195	120	110	2,373	234	119	150	487	429	438	437	469	396	192
	F..	6,000	1,246	412	195	121	96	2,070	254	128	219	567	522	431	427	519	512	352
	P..	11,724	2,809	797	390	241	206	4,443	488	247	369	1,054	951	869	864	988	908	544
Cancer	M..	121	....	....	....	....	....	....	1	....	2	1	8	15	27	35	29	3
	F..	252	....	....	....	....	....	....	....	....	2	5	20	43	66	49	54	13
	P..	373	....	....	....	....	....	....	1	....	4	6	28	58	93	84	83	16
Cerebro-spinal Meningitis	M..	16	6	1	2	....	1	10	2	3	....	1	....	....	....	....	....	....
	F..	14	....	2	....	..	1	3	4	3	2	2	....	....	....	....	....	....
	P..	30	6	3	2	....	2	13	6	6	2	3	....	....	....	....	....	....
Consumption	M..	824	19	7	3	7	2	38	11	14	61	262	169	122	71	50	26	....
	F..	959	16	9	5	4	1	35	22	36	118	303	202	115	55	45	25	3
	P..	1,783	35	16	8	11	3	73	33	50	179	565	371	237	126	95	51	3
Diarrhœal Diseases	M..	613	480	66	6	2	1	555	2	2	1	4	5	6	11	14	9	4
	F..	533	381	68	8	1	2	460	3	1	2	2	5	11	5	21	12	11
	P..	1,146	861	134	14	3	3	1,015	5	3	3	6	10	17	16	35	21	15
Diphtheria	M..	300	27	66	65	56	52	266	94	21	4	1	3	1	....	....	....	....
	F..	370	14	62	76	53	46	251	96	18	2	2	....	1	....	....	....	....
	P..	760	41	128	141	109	98	517	190	39	6	3	3	2	....	....	....	....
Fever, Scarlet	M..	66	5	16	10	7	9	47	15	2	1	1	....	....	....	....	....	....
	F..	76	4	14	13	16	7	54	17	1	1	2	1	....	....	....	....	....
	P..	142	9	30	23	23	16	101	32	3	2	3	1	....	....	....	....	....
Fever, Typhoid	M..	99	1	....	....	....	1	2	6	6	11	36	22	9	5	1	1	....
	F..	103	....	2	1	3	1	7	5	18	20	29	12	7	2	2	1	....
	P..	202	1	2	1	3	2	9	11	24	31	65	34	16	7	3	2	....
Influenza	M..	5	....	....	....	....	....	....	....	....	....	1	1	1	2	....	....	....
	F..	7	....	1	....	....	....	1	....	....	....	1	....	1	2	....	2	....
	P..	12	....	1	....	....	....	1	....	....	....	2	1	2	4	....	2	....
Measles	M..	44	9	19	7	3	1	39	4	....	....	....	1	....	....	....	....	....
	F..	43	10	13	7	2	1	33	7	1	....	1	1	....	....	....	....	....
	P..	87	19	32	14	5	2	72	11	1	....	1	2	....	....	....	....	....
Small-pox	M..	1	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....
	F..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
	P..	1	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....
Whooping-cough	M..	55	35	13	3	1	2	54	1	....	....	....	....	....	....	....	....	....
	F..	49	22	14	9	....	2	47	2	....	....	....	....	....	....	....	....	....
	P..	104	57	27	12	1	4	101	3	....	....	....	....	....	....	....	....	....
Pneumonia and Bronchitis	M..	730	191	72	27	15	10	315	17	8	16	39	49	67	64	60	52	43
	F..	772	163	72	19	13	9	276	19	7	23	50	46	52	55	98	90	56
	P..	1,502	354	144	46	28	19	591	36	15	39	89	95	119	119	158	142	99
Diseases of Heart	M..	306	26	2	....	1	....	29	3	13	8	23	37	31	45	56	47	14
	F..	366	16	1	....	1	1	19	8	11	7	21	48	44	63	62	63	20
	P..	672	42	3	....	2	1	48	11	24	15	44	85	75	108	118	110	34
Diseases of Brain and Spinal Cord	M..	686	177	56	37	16	14	300	31	12	12	23	24	45	51	83	81	24
	F..	631	112	72	28	15	14	241	25	6	12	16	23	29	49	74	100	56
	P..	1,317	289	128	65	31	28	541	56	18	24	39	47	74	100	157	181	80
Diseases of Kidneys	M..	183	...	....	2	....	1	3	2	3	2	15	21	35	32	45	17	8
	F..	161	2	1	....	1	....	4	3	3	1	23	22	29	22	24	19	6
	P..	344	2	1	2	1	1	7	10	6	3	38	43	64	54	69	36	14
Suicide	M..	31	....	....	....	....	....	....	....	....	....	5	6	5	8	5	2	....
	F..	12	....	....	....	....	....	....	....	....	1	3	4	1	2	1	....	....
	P..	43	....	....	....	....	....	....	....	....	1	8	10	6	10	6	2	....
All other causes	M..	1,554	587	67	33	12	16	715	45	35	32	74	83	101	121	120	132	96
	F..	1,652	505	81	29	12	11	638	38	23	28	107	138	98	106	143	146	187
	P..	3,206	1,092	148	62	24	27	1,353	83	58	60	181	221	199	227	263	278	283

Marriages: 6,228.

Live-births: M 8,679, F 8,392, P 17,071.

Still-births: M 431, F 313, P 744.

50, after which there is a slight rise. The male rate after 10 rises more gradually than the female and attains its maximum at 20–30, one period later than the female. It then declines gradually and closes with a slight rise after 70.

Measles. — At all ages the difference in the male and female rates is slight. From birth to 2 years of age the male rate is somewhat above the female, the disparity being more marked in the second year of life.

Whooping-cough. — At all ages there is a slight excess in the male rate, while in the first year the excess is very marked. In the second and third years the female rate is considerably the higher.

Pneumonia and Bronchitis. — At all ages male and female rates are about the same. In the first year of life both are excessive, and they are also high in the second year. Both are very high in the later years, reaching their maxima after 80.

Diseases of Heart. — At all ages the female rate exceeds the male somewhat. The high rates for both sexes under 1 are due to congenital defects. After 50 both rates are high and rise continuously.

Brain and Spinal Cord. — This includes nearly all those causes of death which are in some nomenclatures placed under the heading "Diseases of the Nervous System." The male rate at all ages is decidedly above the female. The male rate is exceedingly high under 1, and the female rate quite high at 0–2. After 4 the male rate is below its rate at all ages till 50. It then rises rapidly to attain at over 80 a height nearly as great as it had under 1.

The female rate is below its rate at all ages from 5–50. It then follows pretty much the ascending course of the male, though on a lower level.

Diseases of Kidneys. — The diseases included under this heading practically consist of the various diseases of the kidneys grouped under the common term "Bright's Disease." At all ages the male rate shows a decided excess above the female. The male rate remains below its rate at all ages till 40 years is reached, when it rises rapidly and remains high to the finish.

The female rate follows closely the course of the male, but at a lower elevation. The sudden rise at the 20–30 period is probably due to puerperal influences.

Suicide. — At all ages male suicides, here as elsewhere, are largely in excess of the female. From the age of twenty years the male rate rises in an unbroken ascent to reach its maximum between 60 and 70, a time when it must be apparent that the failures of life are no longer retrievable, and *tædium vitæ* has become unendurable. After 70, though the journey is nearly over, the male still lacks endurance to await the inevitable.

All other causes. — This is a useful receptacle, a large part of the contents of which, if placed under any other heading, would have to be under that of " Unknown and Ill-defined."

Of these vague terms some denote symptoms of disease, some are indicative of modes of dying, and others are conditions common to many diverse forms of disease.

A little more care on the part of the certifying physicians would remedy somewhat this unsatisfactory condition, but after the exercise of due care a portion of the causes certified will still remain vague owing to the fact that in early life and in advanced age diseases are not so clearly defined as in the intermediate period, and the diagnosis necessarily becomes uncertain.

EDWIN FARNHAM, M.D.

TABLE II.

CAMBRIDGE, MASS., 1881–1890 INCLUSIVE.

ANNUAL DEATH-RATE PER 1000 LIVING.

		All Ages.	0-1	1-2	2-3	3-4	4-5	0-5	5-10	10-15	15-20	20-30	30-40	40-50	50-60	60-70	70-80	Over 80
All Causes	M..	19.44	278.11	77.77	27.08	18.60	16.74	77.07	7.63	4.25	5.10	8.00	9.56	13.26	21.64	42.36	83.36	243.03
	F...	18.78	196.84	95.15	27.77	18.47	16.29	68.72	8.03	4.37	7.46	8.50	10.44	12.18	18.33	34.69	75.62	170.87
	P...	19.10	235.06	85.88	27.42	18.53	16.53	72.94	7.84	4.31	6.28	8.26	10.02	12.70	19.87	37.95	78.81	190.87
Cancer	M..	0.41	.....	.....	.....	.....	.....	.....	0.03	.....	0.06	0.01	0.17	0.45	1.33	3.16	6.10	3.79
	F...	0.78	.....	.....	.....	.....	.....	.....	.....	.....	0.06	0.07	0.40	1.21	2.83	3.27	7.97	6.31
	P...	0.60	.....	.....	.....	.....	.....	.....	0.01	.....	0.06	0.04	0.29	0.84	2.13	3.22	7.20	5.61
Cerebro-Spinal Meningitis	M..	0.05	1.06	0.20	0.27	.....	0.15	0.32	0.06	0.10	.....	0.01	.....	.....	.....	.....	.....	.....
	F...	0.04	.....	0.46	.....	.....	0.16	0.09	0.12	0.10	0.06	0.02	.....	.....	.....	.....	.....	.....
	P...	0.04	0.50	0.32	0.14	.....	0.16	0.21	0.09	0.10	0.03	0.02	.....	.....	.....	.....	.....	.....
Consumption	M..	2.79	3.38	1.41	0.41	1.08	0.30	1.23	0.35	0.50	2.07	4.30	3.76	3.69	3.51	4.51	5.47	.....
	F...	3.00	2.52	2.07	0.71	0.61	0.16	1.16	0.69	1.23	4.02	4.54	4.04	3.25	2.36	3.00	3.69	1.45
	P...	2.90	2.92	1.72	0.56	0.84	0.24	1.19	0.53	0.87	3.04	4.42	3.91	3.46	2.89	3.64	4.42	1.66
Diarrhœal Diseases	M..	2.08	85.40	13.33	0.83	0.31	0.15	18.02	0.06	0.07	0.03	0.06	0.11	0.18	0.54	1.26	1.89	5.06
	F...	1.66	60.18	15.70	1.13	0.15	0.33	15.27	0.09	0.03	0.06	0.02	0.10	0.31	0.21	1.40	1.77	5.33
	P...	1.86	72.05	14.43	0.98	0.23	0.24	16.66	0.08	0.05	0.05	0.04	0.10	0.24	0.36	1.34	1.82	5.26
Diphtheria	M..	1.32	4.80	13.33	9.02	8.68	7.91	8.63	3.06	0.75	0.13	0.01	0.06	0.03	.....	.....	.....	.....
	F...	1.15	2.21	14.31	10.82	8.09	7.80	8.33	3.03	0.61	0.06	0.02	.....	0.02	.....	.....	.....	.....
	P...	1.23	3.43	13.79	9.91	8.38	7.86	8.48	3.05	0.68	0.10	0.02	0.03	0.02	.....	.....	.....	.....
Fever, Scarlet	M..	0.22	0.88	3.23	1.38	1.08	1.36	1.52	0.48	0.07	0.03	0.01	.....	.....	.....	.....	.....	.....
	F...	0.23	0.63	3.23	1.85	2.44	1.18	1.79	0.53	0.03	0.03	0.02	0.02	.....	.....	.....	.....	.....
	P...	0.23	0.75	3.23	1.61	1.76	1.28	1.65	0.51	0.05	0.03	0.02	0.01	.....	.....	.....	.....	.....
Fever, Typhoid	M..	0.33	0.17	.....	... ..	.....	0.15	0.06	0.19	0.21	0.37	0.59	0.49	0.27	0.24	0.09	0.21	.....
	F...	0.32	.....	0.46	0.14	0.45	0.16	0.23	0.15	0.61	0.68	0.43	0.24	0.19	0.08	0.13	0.14	.....
	P...	0.32	0.08	0.21	0.07	0.23	0.16	0.14	0.17	0.41	0.52	0.50	0.35	0.23	0.16	0.11	0.17	.....
Influenza	M..	0.01	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.01	0.02	0.03	0.09	.....	.....	.....
	F...	0.02	.....	0.23	.....	.....	.....	0.03	.....	.....	.....	0.01	.....	0.02	0.08	.....	0.29	.....
	P...	0.01	.....	0.10	.....	.....	.....	0.01	.....	.....	.....	0.01	0.01	0.02	0.09	.....	0.17	.....
Measles	M..	0.14	1.60	3.83	0.97	0.46	0.15	1.36	0.13	.....	.....	.....	0.02	.....	.....	.....	.....	.....
	F...	0.13	1.57	3.00	0.99	0.30	0.16	1.09	0.23	0.03	.....	0.01	0.02	.....	.....	.....	.....	.....
	P...	0.14	1.58	3.44	0.98	0.38	0.16	1.18	0.17	0.01	.....	0.007	0.02	.....	.....	.....	.....	.....
Small-pox	M..	0.003	.....	.....	.....	.....	.....	.....	.....	... ..	.....	0.01	.....	.....	.....	.....	.....	.....
	F...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	P...	0.001	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.007	.....	.....	.....	.....	.....	.....
Whooping-cough	M..	0.18	6.22	3.62	0.41	0.15	0.30	1.75	0.03	.....	.....	.....	.....	.....	.....	.....	.....	.....
	F...	0.15	3.47	3.23	1.28	.....	0.33	1.56	0.06	.....	.....	.....	.....	.....	.....	.....	.....	.....
	P...	0.16	4.76	2.90	0.84	0.07	0.32	1.65	0.04	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pneumonia and Bronchitis	M..	2.48	33.98	14.54	3.75	2.32	1.52	10.23	0.55	0.28	0.54	0.64	1.09	2.02	3.16	5.42	10.94	54.43
	F...	2.41	25.75	16.62	2.70	1.98	1.52	9.16	0.60	0.23	0.78	0.74	0.92	1.46	2.36	6.55	13.29	27.18
	P...	2.44	29.62	15.51	3.23	2.15	1.52	9.70	0.57	0.26	0.66	0.69	1.00	1.74	2.73	6.06	12.32	34.73
Diseases of Heart	M..	1.03	4.62	0.40	.....	0.15	.....	0.94	0.09	0.46	0.27	0.37	0.82	0.93	2.22	5.05	9.89	17.72
	F...	1.14	2.52	0.23	.....	0.15	0.16	0.63	0.25	0.37	0.23	0.31	0.96	1.24	2.70	4.14	9.30	9.70
	P...	1.09	3.51	0.32	.....	0.15	0.08	0.78	0.17	0.41	0.25	0.34	0.89	1.09	2.48	4.53	9.54	11.92
Diseases of Brain and Spinal Cord	M..	2.33	31.49	11.31	5.13	2.48	2.13	9.74	1.01	0.42	0.40	0.37	0.53	1.36	2.52	7.49	17.05	30.37
	F...	1.97	17.69	16.62	3.98	2.29	2.37	8.00	0.79	0.20	0.40	0.23	0.46	0.81	2.10	4.94	14.77	27.18
	P...	2.14	24.18	13.79	4.57	2.38	2.24	8.88	0.89	0.31	0.40	0.30	0.49	1.08	2.29	6.03	15.71	28.07
Diseases of Kidneys	M..	0.62	.....	.....	0.27	.....	0.15	0.09	0.06	0.10	0.06	0.24	0.46	1.06	1.58	4.06	3.57	10.12
	F...	0.50	0.31	0.23	.....	0.15	.....	0.13	0.25	0.10	0.03	0.34	0.44	0.81	0.94	1.60	2.80	2.91
	P...	0.56	0.16	0.10	0.14	0.07	0.08	0.11	0.16	0.10	0.05	0.29	0.45	0.93	1.24	2.65	3.12	4.91
Suicide	M..	0.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.08	0.13	0.15	0.39	0.45	0.42	.....
	F...	0.03	.....	.....	.....	.....	.....	.....	.....	.....	0.03	0.04	0.08	0.02	0.08	0.06	.....	.....
	P...	0.07	.....	.....	.....	.....	.....	.....	.....	.....	0.01	0.06	0.10	0.08	0.22	0.23	0.17	.....
All other other causes	M..	5.28	104.44	13.53	4.58	1.86	2.43	23.22	1.46	1.25	1.08	1.21	1.85	3.05	5.99	10.84	27.78	121.51
	F...	5.17	79.77	18.70	4.13	1.83	1.86	21.18	1.20	0.78	0.95	1.60	2.76	2.76	4.55	9.55	21.56	90.77
	P...	5.22	91.38	15.94	4.36	1.84	2.16	22.21	1.33	1.01	1.02	1.41	2.33	2.90	5.22	10.10	24.13	99.29

Marriage-rate per 1000 living: 10.14

Birth-rate per 1000 living: M 29.48, F 26.27, P 27.81

Still-births per 100 births: M 4.73, F 3.59, P 4.17

REPORT OF THE INSPECTOR OF MILK

To His Honor the Mayor and the City Council of the City of Cambridge : —

GENTLEMEN : — I have the honor to present the annual report of the Department for the Inspection of Milk for the year ending November 30, 1897.

There has been no change made in the work of this department during the year ; it consists as before in the enforcement of the laws regulating the sale of milk, vinegar and oleomargarine, and in the inspection of the sources, and analysis of samples of the ice sold for domestic use in this city. The quality of the milk offered for sale this year has been very good; also the supply has been ample, which may in part account for the good quality, as there is not the same temptation to adulterate milk when there is plenty of it that there is when the supply is deficient.

The standard is the same as before, namely, 13 per cent of milk solids and 3.7 per cent of fat, except during the months of April, May, June, July and August, when only 12 per cent of milk solids and 3 per cent of fat are required. The number of samples of milk collected from stores and teams for analysis is larger than last year by over seven hundred, while the number of milk licenses issued is almost exactly the same. Very few samples of artificially colored milk have been seen, and though in some few cases samples of much adulterated milk have been found, the general supply is certainly much better than it was a few years ago. Sixteen samples are now collected from either stores or teams every day in the week, which is enough to make each dealer's turn come with moderate frequency, and as no routine order is observed in the collections, no dealer ever knows when he may be called upon for a

sample, and so tries to keep his milk supply of good quality all the time.

There are still but very few samples brought in by the general public, which is a pity, as in this way cases would be found which now never come to the Inspector's notice. Samples are tested at any time in the laboratory free of charge, for any one who takes the trouble to bring them in, and if the public would take advantage of this opportunity the quality of the milk supply could be still further improved. But the fact is that at present it is of far more importance that some system of inspection of the farms where milk is raised, and of the manner in which it is handled before it reaches the consumer, should be devised, so as to prevent its contamination with disease germs, than that anything further should be done to prevent its gross adulteration. Adulteration is now pretty well guarded against and provided for by the present legislation, while there is nothing whatever done to ensure that milk is either raised under healthy conditions, or handled properly and kept even decently clean while on its way to the consumer. As a consequence much sickness can every year be traced to the milk supply, and much which cannot be traced is doubtless due to it.

Of the 3,252 samples of milk collected 350 were found to be below the required standard, but of these 350 samples of poor milk 254 contained 12 per cent or over of milk solids, and 132 contained 12.50 per cent or over, so that the whole number of very poor samples was quite small; 173 warnings were sent to the dealers from whom these samples were collected, and a few of the cases were taken into court where a conviction was obtained in each case. In two or three cases no complaint was entered on condition that the dealer should sell no more milk in Cambridge, and in one or two instances no complaint was made at the time, but the dealer was told that one would be entered on that case if another sample was found to be below the standard.

All the samples of butter taken from stores or teams this year proved to be genuine, and as no one took out a license for the sale of oleomargarine, it seems probable that but little of this article is now sold in the city.

Vinegar is required to have an acidity of 4.50 per cent of absolute acetic acid, and if cider vinegar, to contain also 2 per cent of cider vinegar solids. Practically all of the vinegar samples collected were of the right degree of acidity, and most of those sold as cider vinegar contained as well the required solids; a few samples however were found to fall a little short in this last particular. There are not at present nearly so many samples of vinegar found with a very small percentage of solids as a few years ago; a very small amount of solids shows clearly that a vinegar is not made from pure cider, a full amount of solids does not, however, necessarily prove that it is. In many cases the dealer refuses to warrant the vinegar from which the sample is taken as a pure cider vinegar; whether he is so scrupulous in the case of ordinary customers is a point on which I have considerable doubt.

Of the 201 samples of vinegar collected, 26 were found to contain less than the required amount of solids. The following table shows the work done by this department on these three articles of food, and it is to be hoped that this work may soon be extended so as to cover all articles of food, many of which require inspection as much as these.

Number of annual milk licenses	183
Number of store milk licenses	118
Amount collected from licenses	$150 50
Total number of samples collected	3,480
Total number of milk samples collected	3,252
Total number of vinegar samples collected	201
Total number of butter samples collected	37
Number of samples of milk below the standard	350
" " " " vinegar below the standard	26
" " warnings sent for poor milk	173
" " " " " " vinegar	20
" " complaints entered	5
" " convictions	5
Amount of fines imposed	$380 00

The ice companies doing business in this city and the sources of their supply as given to me by them are the same as last year:

1. The Fresh Pond Ice Co. Cuts at Lake Muscatanapus, Brookline, N. H.

2. Independent Ice Co. Cuts at Mirror Lake, Hudson, Mass.; Lovell's Pond, Sanbornville, N. H.; and Lake Winnepesaukee, Lakeport, N. H.

3. Boston Ice Co. Cuts at Horn Pond, Woburn, Mass.; Lake Quanapoit, Wakefield, Mass.; Newfield Pond, N. Chelmsford, Mass.; Sandy Pond, Ayer, Mass.; Salmon Falls River, Milton, N. H.; and Country Pond, Newton Jct., N. H.

4. Driver's Union Ice Co. Cuts at Lake Massapoag, Sharon Heights, Mass.; Waushakum Lake, S. Framingham, Mass.; Chebacco Lake, Hamilton, Mass.; Wenham Lake, N. Beverly, Mass.; Lovell's Pond, Sanbornville, N. H.; Powwow River, Kingston, N. H.

5. Standard Ice Co. Buys from Driver's Union.

6. Harvard Ice Co. Buys from Fresh Pond.

7. Cambridge Ice Co., now consolidated with the Durgin Ice Co. Cuts at Spy Pond, Arlington, and Smith's Pond, Belmont.

8. Nickerson Ice Co. Cuts at Wenham Lake, Beverly, Mass.; and Smith's Pond, Wolfborough, N. H.

These sources of supply may be roughly divided into three classes: those which are good, those which are fair and those which are open to suspicion. The following table shows in which of these classes the foregoing sources of supply come.

Class 1.	Class 2.	Class 3.
Good.	Fair.	Open to Suspicion.
Lake Muscatanapus, Brookline, N. H.	Newfield Pond, N. Chelmsford, Mass.	Spy Pond, Arlington, Mass.
Mirror Lake, Hudson, Mass.	Sandy Pond, Ayer, Mass.	Smith Pond, Belmont, Mass.
Lovell's Pond, Sanbornville, N. H.	Salmon Falls River, Milton, N. H.	Lake Quanapoit, Wakefield, Mass.
Lake Winnepesaukee, Lakeport, N. H.	Lake Massapoag, Sharon Heights, Mass.	Horn Pond, Woburn, Mass.
Country Pond, Newton Junction, N. H.	Waushakum Lake, S. Framingham, Mass	
Chebacco Lake, Hamilton, Mass.	Powwow River, Kingston, N. H.	
Wenham Lake, Beverly, Mass.		
Smith's Pond, Wolfboro, N. H.		

Those coming in the first and second class may be safely passed, and for a detailed description of the surroundings and characteristics of these sources I would refer to the report submitted last year. I think it well, however, again to call attention to those sources of ice supply which come under the third class. As will be seen on reference to the foregoing table they are four in number, and in this connection I will call attention to the report of the State Board of Health made in 1890, and especially to the following paragraph with which the report closes: "The results obtained lead to the conclusions that, while clear ice from polluted sources may contain so small a percentage of the impurities of the source that it may not be regarded as injurious to health, the snow ice and any ice, however clear, that may have been obtained by flooding, is likely to contain so large a percentage of the impurities of the source, and with these impurities some of the disease germs that may be in the source, that the Board feels bound to warn the public against using ice for domestic purposes that is obtained from a source polluted by sewage beyond that which would be allowable in a drinking water stream or pond."

Although these four ponds were quite fully considered last year, it would perhaps be well to again call attention to them.

Horn Pond is a small body of water in the city of Woburn. The northern shore is thickly settled and with a not very good class of houses; the pond has a brook running into its upper end, which brook runs through a part of the town and receives drainage from cow sheds, outhouses and yards. The pond has been many times condemned by the State Board of Health, and an analysis of the water shows evidence of some contamination.

Lake Quanapoit in the town of Wakefield is quite a large body of water. There are many good dwelling houses on one shore which is rather steep, a cemetery is at one end and for the most part low land around the rest of the pond. While it is not so bad as Horn Pond, still it is not a desirable source of ice supply, and can hardly be considered as suitable for drinking water without filtration.

Spy Pond and Smith Pond may very well be considered together, as they are close together and connected by a short brook. There

is a large population around part of Spy Pond and for the most part market gardens around the rest. The shores of Smith Pond are low and swampy, but it receives by means of a brook the drainage from a large area of market gardens. Now market gardens are all very heavily manured, often with night soil, and the drainage from them seems to me a very undesirable addition to the source of an ice supply, while the analysis of the water of both ponds shows clear evidence of contamination.

The following table shows the annual appropriation for this department and the manner in which it has been expended :

Appropriation		$1,600 00
Salaries	$1,361 00	
Paid for milk samples	38 12	
" " car tickets	30 00	
" " platinum dishes	35 00	
" " Babcock Milk Tester	10 80	
" " printing, etc.	35 84	
" " stationery, etc.	14 00	
" " chemicals and incidentals	59 14	
Unexpended balance	16 10	
		$1,600 00

Respectfully submitted,

FRANK A. DUNBAR, M.D.

Inspector of Milk.

December 1, 1897.

Ice Analyses.

Twenty drops = 1 c.c.	Per drop of Melted Ice.	Parts per 100,000.						
	Bacteria.	Total Solids.	Mineral Matter.	Volatile and Organic.	Sediment.	Chlorine.	Free Ammonia.	Album. Ammonia.
Fresh Pond Ice Company cut at Brookline, N. H.	362	7.00	5.00	2.00	Small am't	0.30	0.001	0.006
Boston Ice Company cut at Horn Pond, Woburn	Innumerable.	5.00	2.00	3.00	Small am't	0.30	0.0015	0.016
Drivers' Union Ice Company cut at Chebacco Lake, Hamilton	375	4.00	2.00	2.00	Small am't	0.20	0.001	0.008
Harvard Ice Company cut at Brookline, N. H.	249	6.00	5.00	1.00	Small am't	0.25	0.0005	0.008
Durgin Ice Company cut at Smith Pond, Belmont	286	6.00	2.00	4.00	Small am't	0.30	0.002	0.012
Standard Ice Company cut at Chebacco Lake, Hamilton	350	5.00	3.00	2.00	Small am't	0.30	0.001	0.008
Independent Ice Company cut at Lovell's Pond, N. H.	125	3.00	2.00	1.00	Slight.	0.20	0.001	0.006
Nickerson Ice Company cut at Lovell's Pond, N. H.	135	4.00	3.00	1.00	Slight.	0.25	0.000	0.006
Cambridge Ice Company cut at Spy Pond, Arlington	754	5.00	1.50	3.50	Small am't	0.30	0.003	0.010

Water Analyses.

	Per drop.	Parts per 100,000.						
	Bacteria.	Total Solids.	Mineral Matter.	Volatile and Organic.	Sediment.	Chlorine.	Free Ammonia.	Album. Ammonia.
Horn Pond, Woburn	108	10.00	4.00	6.00	Mod. am't	1.40	0.002	0.018
Lake Quanapoit, Wakefield	136	9.00	6.00	3.00	Mod. am't	1.35	0.001	0.014
Spy Pond, Arlington	340	21.00	16.00	5.00	Considerable.	2.50	0.021	0.022
Smith Pond, Belmont	400	28.00	21.00	7.00	Considerable.	9.10	0.015	0.021
Fresh Pond, Cambridge	125	6.00	2.00	4.00	Small am't	0.70	0.001	0.010

REPORT OF THE OVERSEERS OF THE POOR

Central Square Building,

Cambridge, December 27, 1897.

To the Honorable the City Council of the City of Cambridge : —

Gentlemen : — The Overseers of the Poor submit the following annual report for the year ending November 30, 1897, it being the twentieth since the organization of the Board in May, 1877.

The City Council re-elected Mr. Stephen Anderson on April 6 last as a member of the Board for the term of five years, he having served continuously since 1889.

In the month of March the City Council made up the usual budget of expenses and receipts for the year, and the following appropriations were made for the different branches of this department : —

Outside Aid	$49,500 00
Almshouse	20,500 00
Farm and Ledge	11,500 00
House Offal	26,000 00
	$107,500 00
Expenditures	104,873 80
Balance unexpended	$2,626 20
City Physician's salary	1,500 00

The following were the actual expenditures and receipts of each department for the year : —

OUTSIDE AID.

Expenditures	$46,027 13
Receipts	5,144 79
Net cost	$40,882 34

ALMSHOUSE.

Expenditures	$20,816 43
Receipts	1,435 58
Net cost	$19,380 85

FARM AND LEDGE.

Expenditures	$12,048 33
Receipts	15,683 63
Net gain	$3,635 30

HOUSE OFFAL.

Expenditures	$25,981 91
Receipts	7,228 79
Net cost	$18,753 12

The appropriation for City Physician was $1,500.00, all of which was expended as his salary. The expense of medicines and appliances for the treatment of the poor has been paid out of the appropriations for the Overseers of the Poor Department.

The number of persons at institutions for whose support the City is liable has been as follows: —

City Almshouse	270
State Lunatic Hospitals	191
State Almshouse	12
Baldwinville Hospital Cottages	2
Massachusetts School for Feeble-Minded	10
Number of insane in families	4
	489

The insane hospital cases include 9 at the Danvers Lunatic Hospital, 61 at the Worcester Lunatic Hospital, 16 at the Worcester Insane Asylum, 3 at the Taunton Lunatic Hospital, 1 at the Northampton Lunatic Hospital, 21 at the Westboro Insane Hospital, 16 at the Foxboro Dipsomaniac Hospital, 44 at the Medfield Insane Asylum, 10 in the insane ward at the State Almshouse at Tewksbury, 10 in the insane ward at the State Farm at Bridgewater. Four insane women have been boarded out in families, all under the supervision of the State Board of Lunacy and Charity. There have been 25 mildly insane cases at the Almshouse, in addition to the number at the lunatic hospitals supported by the city.

The amount paid to the State Lunatic Hospitals and private families for the insane has been $24,042.93, which is $625.44 more than the previous year. The relations of the insane and other persons supported by the city have paid $1,572.94 into the City Treasury. Other cities and towns have reimbursed the city to the amount of $2,009.67 for aid rendered their poor living in Cambridge. The State Treasurer has paid $1,562.18 for the support of cases having no settlement which were aided from the office of the Board.

There have been 613 histories taken of new applicants for relief, and 54 histories have been revised, as appears from the report of the Visitor.

The City Physician has made 133 visits upon 1,353 patients at the Almshouse, and he has also made 2,043 visits upon 1,117 patients outside of the institution, as seen by his report.

There have been 270 inmates in the Almshouse during the year, and there remained 120 persons on November 30, as appears in the report of the superintendent. Other interesting details will be found in his report relating to the house, farm, ledge and offal departments.

Four hundred and ninety-six families, consisting of 1,488 persons, have been aided from the office of the Board during the past year. Fifty-nine of these families lived in Wards 1 and 5, 316 of them resided in Wards 2 and 4, and 121 of them lived in Ward 3.

Recapitulation.

Total expenditures for Outside Aid, Almshouse, Farm and Ledge	$78,891 89
Receipts for the same	22,264 00
Net cost of care of the Poor	$56,627 89
Salary of the City Physician	1,500 00

Respectfully submitted,

WILLIAM W. BURRAGE,
Ward 2, Chairman.
ALEX. MILLAN,
Ward 1.
STEPHEN ANDERSON,
Ward 3.
CHARLES WALKER,
Ward 4.
CHARLES BULLOCK,
Ward 5.

Overseers of the Poor.

REPORT OF THE SUPERINTENDENT OF THE ALMSHOUSE

To the Overseers of the Poor:—

Gentlemen: — The annual report of the Almshouse for the year ending November 30, 1897, is herewith respectfully submitted.

The whole number in the Almshouse during the year has been as follows: —

Males	150
Females	120
Total	270
Adults	232
Minors	38
Whole number in the Almshouse Nov. 30, 1897.	120
Average number during the year	125

Included in the whole number in the Almshouse November 30, 1897, there are:

INSANE OR DEMENTED.

Males	7
Females	18
Total	25

IDIOTIC OR IMBECILE.

Males	2
Females	2
Total	4

BLIND.

Males	4
Females	2
Total	6

EPILEPTIC.

Males	2
Females	2
Total	4

Included in the whole number discharged during the year, are twenty-nine persons sent to other institutions, as follows :—

To Boston Almshouse	3
Carney Hospital	1
Children's Hospital, Boston	1
Home for Destitute Catholic Children, Boston	7
Massachusetts State Home, Roxbury	4
Middlesex House of Correction	1
Soldiers' Home, Chelsea	1
Somerville Hospital	1
State Almshouse, Tewksbury	7
Women's Prison, Sherborn	1
Worcester Lunatic Hospital	2

Remaining in the Almshouse Nov. 30, 1897 : —

Males	69
Females	51
Adults	114
Minors — Boys, 3; Girls, 3	6

Of the boys remaining Nov. 30, 1897, there are : —

Neglected children	2
Dependent children	1
Total	3

Of the girls remaining Nov. 30, 1897, there are : —

Neglected children	1
Dependent children	2
Total	3

All statistics which possess a general interest will be exhibited by the following tables : —

Table I.

Showing lhe number and sex of adult persons and minors of all classes received into the Almshouse in each month of the year ending Nov. 30, 1897.

Months.	Adults.		Minors.		Total.	Dependent Children.		Neglected Children.	
1896.	M.	F.	M.	F.		M.	F.	M.	F.
December	9	4	1	1	15	1	1	0	0
1897.									
January	2	7	2	2	13	2	2	0	0
February	7	2	1	1	11	1	1	0	0
March	3	8	0	0	11	0	0	0	0
April	5	5	1	2	13	1	2	0	0
May	9	4	0	1	14	0	1	0	0
June	7	4	4	2	17	4	2	0	0
July	5	4	0	2	11	0	2	0	0
August	3	5	4	1	13	4	1	0	0
September	5	3	0	0	8	0	0	0	0
October	4	2	1	0	7	1	0	0	0
November	4	4	1	1	10	1	1	0	0
Totals	63	52	15	13	143	15	13	0	0

Table II.

Showing the number and sex of adult persons and minors of all classes discharged from the Almshouse in each month of the year ending Nov. 30, 1897.

Months.	Adults.		Minors.		Total.	Dependent Children.		Neglected Children.	
1896.	M.	F.	M.	F.		M.	F.	M.	F.
December	6	4	1	1	12	1	1	0	0
1897.									
January	2	3	0	0	5	0	0	0	0
February	1	4	3	1	9	2	0	1	1
March	8	7	1	2	18	1	2	0	0
April	14	9	0	2	25	0	2	0	0
May	5	6	1	1	13	1	1	0	0
June	12	5	3	3	23	3	3	0	0
July	3	3	1	1	8	1	1	0	0
August	2	4	0	0	6	0	0	0	0
September	7	3	3	1	14	3	1	0	0
October	1	3	4	1	9	4	1	0	0
November	2	4	1	1	8	1	1	0	0
Totals	63	55	18	14	150	17	13	1	1

Table III.

Showing the name, age, time of admission, date and cause of death of each person who has died in the Almshouse during the year ending Nov. 30, 1897.

Names.	Age.	Date of Admission.	Date of Death.	Cause of Death.
Hannah Murphy	82	Jan. 16, 1895.	Dec. 9, 1896.	Dementia.
James Burns	68	June 29, 1896.	Dec. 26, 1896.	Natural Causes.
Julia Murrell	46	Oct. 24, 1896.	Jan. 13, 1897.	Terminal Dementia.
Ann Murphy	66	Jan. 22, 1896.	Feb. 1, 1897.	Senile Dementia.
Margaret McQuade	74	July 15, 1893.	Feb. 13, 1897.	Malignant Disease of Stomach.
Andrew Burns	37	April 12, 1897.	April 15, 1897.	Consumption.
Catharine Conway	73	Mar. 15, 1897.	April 27, 1897.	Carbuncle and Exhaustion.
James W. Pulsifer	78	Oct. 22, 1884.	May 16, 1897.	Senile Debility.
Mary Gallivan	74	Sept. 8, 1885.	July 2, 1897.	Heart Disease.
Frederic Enos	20	May 26, 1897.	July 3, 1897.	Consumption.
Edward Conlan	63	May 1, 1897.	Aug. 6, 1897.	Acute Encephalitis.
William Riley	73	Sept. 15, 1896.	Sept. 17, 1897.	Natural Causes.
John O'Halloran	71	Sept. 29, 1894.	Oct. 20, 1897.	Consumption.

Products of the Farm with their Approximate Values.

170 bushels beans	$138 00
325 bushels beets	100 00
870 dozen bunches beets	250 00
100 bushels beet greens	12 00
11,500 cabbages	315 00
30 bushels carrots	25 00
260 dozens bunches carrots	140 00
690 boxes celery	1,950 00
20,000 cucumbers	300 00
1,300 bushels dandelion greens	700 00
400 dozens eggs	100 00
500 dozens green corn	50 00
1,500 dozens lettuce	415 00
120 bushels onions	105 00
450 dozens bunches onions	110 00
225 bushels parsnips	160 00
75 bushels peas	55 00
Amount carried forward	$4,925 00

Amount brought forward	$4,925 00
7,500 pounds pie plant	68 00
5,294 pounds pork	252 54
11,000 dozens radishes	250 00
500 bushels spinach	63 00
5 tons squash	100 00
300 bushels tomatoes	180 00
	$5,838 54

Comparative Table of Almshouse, Farm, Ledge, and House Offal Receipts for Seventeen Years ending November 30, 1897.

Years.	Board.	Chair Shop.	Farm.	General Sales.	Stone.	House Offal.	Totals.
1881.....	$322 56	.....	$378 50	.....	$2,529 01	$5,536 88	$8,766 95
1882.....	705 34	.....	436 54	.....	2,626 17	5,705 22	9,473 27
1883.....	1,174 96	.....	476 22	$14 19	2,622 00	5,819 55	10,106 92
1884.....	1,480 93	.....	316 76	.....	4,238 77	6,449 96	12,486 42
1885.....	2,035 58	.....	335 32	149 85	4,509 84	7,354 26	14,384 95
1886.....	613 93	$37 50	772 14	319 75	5,611 38	6,926 23	14,280 93
1887.....	514 64	634 19	1,595 10	241 37	4,684 14	6,856 59	14,526 03
1888.....	557 28	614 94	2,846 52	213 62	6,662 26	6,721 50	17,617 86
1889.....	274 84	479 28	3,684 59	144 36	5,564 18	7,324 61	17.471 06
1890.....	302 49	794 36	4,364 03	150 89	5,651 38	7,386 33	18,649 48
1891.....	1,201 33	844 62	5,213 68	161 71	6,107 86	7,716 77	21,245 97
1892.....	1,253 06	899 81	5,371 60	166 45	5,220 50	7,535 57	20,447 55
1893.....	703 70	325 86	6,400 64	210 09	5,826 74	7,033 52	20,500 05
1894.....	1,094 89	220 07	6,504 66	615 69	7,955 42	8,218 96	24,609 69
1895.....	622 77	77 00	6,512 63	160 19	8,265 14	9,045 55	24,682 78
1896.....	834 52	61 25	5,623 67	147 02	7,639 48	9,155 35	23,461 24
1897.....	1,294 65	3 60	5,348 47	137 33	10,335 16	7,228 79	24,348 00
Totals....	$14,986 97	$4,992 48	$56,181 02	$2,832 51	$96,049 43	$127,015 74	$297,058 15

At the close of another year it becomes my duty again to place before your board "the short and simple annals of the poor."

There have been received into the almshouse in the last year one hundred and forty-three persons.

One hundred and thirty-seven persons have been discharged and thirteen have died.

Among the number received were seventy-seven sick or injured persons who came to receive hospital treatment. Forty-six of these have recovered and gone out to be self-supporting, or have been transferred to other institutions.

Of the thirteen who have died, seven were more than seventy years of age, and six had been in the almshouse less than six months.

The average population of the almshouse during the year has been eleven per cent greater than that of the previous year, yet the cost of maintenance has increased less than three per cent.

Our industries have been fairly remunerative and the net cost to the city of the almshouse, the farm and the ledge is this year five hundred dollars less than the previous year.

With renewed thanks for your continued confidence and assistance in the management of the institution, this report is respectfully submitted.

MARTIN L. ELDREDGE,

Superintendent.

REPORT OF THE CITY PHYSICIAN

CAMBRIDGE, Mass., December 1, 1897.

To the Honorable the City Council of the City of Cambridge: —

GENTLEMEN: I have the honor to present the following report of the doings of this office for the year ending November 30, 1897.

ALMSHOUSE.

Number of visits to Almshouse	133
Number of persons treated therein	111
Number of professional visits to same	1,353
Number of births	3
Number of deaths	13
Cost of medicines and surgical appliances	$333 96

OUTSIDE AID.

Number of persons attended by direction of Overseers of the Poor	739
Number of professional visits to same	2,043
Number examined relative to their sanity	86
Number of certificates of insanity issued	56
Number of births	20
Number sent to the hospitals for treatment	23
Number vaccinated	16
Number of deaths	28
Cost of medicines and surgical appliances	$379 55

DEPARTMENTAL SERVICE AND TOTALS.

Number of persons visited at police stations	30
Number of visits to same	34
Number visited for the Soldiers' Aid Committee	2
Number of visits to same	2
Number of civil service examinations	35

Number of vaccinations by direction of the School Committee	343
Number of persons examined where suit was threatened	23
Number of examinations as to disability of city employees	31
Total number of persons receiving professional attention	1,330
Total number of visits to same	4,291
Total number of deaths	41
Total number of certificates of death issued	63
Total amount expended for medicines and surgical appliances	$713 51

Respectfully,

LEWIS L. BRYANT,
City Physician.

REPORT OF THE CAMBRIDGE WATER BOARD

CAMBRIDGE, December 20, 1897.

To the Honorable the City Council of the City of Cambridge:—

The Cambridge Water Board herewith submit for your consideration their thirty-third annual report for the fiscal year ending November 30, 1897.

This year has been the most memorable one in the annals of the Water Works Department, marking, as it does, the essential completion of the Stony Brook System, which was commenced in the summer of 1884, under authority of legislative act of the winter previous.

The progress of the work has been marked by the completion of Stony Brook Reservoir in Waltham and Weston and its union with Fresh Pond, November 5, 1887, which event was duly celebrated and is recorded in the City Documents of that year. Nothing was done to further develop the system until 1894, when land was taken for the large Hobbs Brook Basin in Waltham, Lincoln and Lexington, and on October 27, 1897, the completion of this basin, together with the new twenty million gallons pumping engine at Fresh Pond, and the new high service reservoir at Payson Park, was duly celebrated. Annexed to this report is the full account of this interesting and important event.

We are pleased to state that during all the progress of this work, involving the employment of thousands of men, only one serious accident has occurred—that being a premature and fatal blast caused by carelessness on the part of one of the contractor's men.

Financial Statement in Brief.

Cost of works to November 30, 1897	$5,285,926.11
Bond Account.	
Bonds issued	$4,875,000.00
Bonds paid	1,913,400.00
Unpaid water bonds	$2,961,600.00
Value of sinking fund	464,138.28
Net debt November 30, 1897	$2,497,461.72

For further details and statement of bonds outstanding we refer you to the report of the Registrar and Trustees of the Water Works Sinking Fund accompanying this report.

With the completion of these great works the City of Cambridge has now in its possession the following valuable properties:

	Area in acres.	Storage capacity in gallons.	Available capacity in gallons.
Cambridge Reservoir, Highland Street	2 1-8	6,000,000	4,000,000
Fresh Pond	165	775,000,000	400,000,000 (at grade 9 or top of conduit), (with auxiliary pump 250,000,000 gallons more.)
Fresh Pond Park, bordering the Pond	165		
Payson Park Reservoir	11 3-4	43,000,000	43,000,000
Stony Brook Reservoir in Weston & Waltham	72	350,000,000	300,000,000
Hobbs Brook Basin (in Waltham Lincoln & Lexington)	1,000	2,000,000,000	1,500,000,000
Total	1,415 7-8	3,174,000,000	2,247,000,000

or about a year's available supply on present basis of consumption.

Fresh Pond, Stony Brook and the upper basin at Hobbs Brook, above Lincoln Street dam, are now full of water, and storage of water will commence in the larger lower basin in a few days.

There are four outstanding claims for land damages—the largest being the Gray land on Huron Avenue.

The other three are comparatively small claims for land taken on Hobbs Brook Basin. To these are to be added the monthly bills and unpaid reserves due contractors and some other small items for incidentals.

When these are paid, the total cost of the entire system of water works will be, in round numbers, $5,500,000.

The gross income from water rates the past year has been $295,966.77. These properties of the city should always prove a valuable investment if wisely managed.

In the great work of the past three years of Hobbs Brook Basin, Payson Park Reservoir and the new pumping engine, this Board realized that they must plan for many years to come, and hence the work should be substantial and enduring.

New Pumping Engine.

For this reason, in contracting for a pumping engine and boilers, it was decided that the ordinary commercial engine and boilers would not be satisfactory or reliable. The best and most approved methods, combining a maximum of result with a minimum of expense for running, should be adopted.

The engine and boilers were built from plans made by Mr. E. D. Leavitt, of this city, whose authority in such matters is of the highest, and whose description of these magnificent pieces of mechanical skill will be found annexed to this report, and is most interesting reading.

We are confident the city will find this a wise investment as the years pass on, and the results aimed at will be more than realized.

Payson Park Reservoir.

The new high service reservoir, which is to be kept filled with water from Fresh Pond by the new pumping engine, has but recently been completed, after three years spent in construction. The delay has been from causes over which the Water Board had no control; and because of this its cost has considerably exceeded our anticipations.

It is now complete, except a little grading around the road on the easterly side. There remains, also, in this connection, to be done, the surface grading of Elm Street, the expense of which will be shared by the Payson Park Trustees.

The new gate house is a conspicuous object and the reservoir must prove a very attractive resort in the future, as the view from the gate house tower is unexcelled by any in the vicinity of Boston.

Although considerable trouble and great delay has been experienced in the construction of this reservoir, it is now a very satisfactory structure and the delay has been of little inconvenience, as there has been equal delay in the construction and erection of the new pumping engine.

After several tests, the division wall, the slopes and bottom of the reservoir are found to be very strong and reasonably free from leak.

As soon as the new engine goes into commission early another year, the whole city will be supplied from this reservoir, and no complaint should be heard after that as to insufficient service, if the plumbers put proper supply pipes in buildings.

The water in the reservoir, when full, stands on a level with the belfry of Memorial Hall tower—178½ feet above city base.

Hobbs Brook Basin.

In the construction of Hobbs Brook Basin several perplexing problems presented themselves, which the Board feel have been wisely decided, after long and careful deliberation. The most important question, both as to financial and sanitary conditions,

was as to how the bottom and sides of the basin should be treated. The final decision was to excavate until a clean gravel or sandy bottom was reached, and to riprap all the artificial shores of the lower or larger basin and as much of the upper basin as seemed practicable. Fortunately, a forest of boulders developed in the lower basin and the work, as now contemplated, makes one of the best storage basins in the United States.

The lower basin contains 706 acres, with an estimated available capacity of 1,200,000,000 gallons, and we expect will be full of water by another summer.

The upper basin contains 294 acres, with available storage capacity of 300,000,000 gallons, and is now full.

Of the 1,000 acres, only 653 acres are used for water storage; the rest is for proper protection of the borders of the basin.

The original estimate of the cost of this basin, made in 1893, was $600,000—for a basin of 650 acres, the dam of which was to be at Brook Street.

The actual cost will be considerably more and results from taking 400 acres more land than was originally planned, so as to build a larger and far more useful basin and more properly protect both sections of the basin from pollution.

The extra cost is also in part because riprapping was not included in the original estimate. This alone has cost to date $125,000. The land damages for 1,000 acres paid to date have been $204,500—or only $44,500 in excess of the original estimate for 650 acres. Another added expense has been the extra excavation, without which the water could not have been properly protected after being stored. A large part of Hobbs Brook Basin was found to contain a deep layer of muck, and, unless this was removed and so covered by sand and rock as to prevent contact with the water, it would inevitably discolor it. The bottom and sides of both basins have been pronounced by sanitary experts, among them Prof. Sedgwick, to be admirably and sufficiently constructed for the best conditions required in a storage and settling basin. It will be interesting to read the following

quotation taken from the Metropolitan Water Supply Commissioners' report as to this Hobbs Brook Basin, then planned and in course of construction:

"If the Hobbs Brook basin were to be built in the manner originally proposed when a reservoir of 350 acres was contemplated, by removing all the soil and vegetable matter from the site of the reservoir, the water stored in it would improve in quality by storage, but with the reservoir of 653 acres which is now contemplated, it is not feasible to make so thorough a preparation for the reception of water without greatly increasing the cost above the original estimate." (Page 91, State Board of Health, 1895).

On page 25 of the same report we read as to the basin:

"Below the dam (Lincoln Street) it is proposed to remove all the soil from cultivated land and where the depth is less than fifteen feet; but not to touch the flat meadow land in the bottom of the valley, where the peaty soil has considerable depth and its complete removal would be very costly."

As the Water Board had not at that time (1894) decided how to treat the bottom of the proposed basin it was merely surmise on the part of the commission; and we decided not only to remove all the soil and vegetable matter from the entire area of 653 acres to be flooded, but also to do what the Metropolitan Commission do not seem to have thought of (a very important requisite in maintaining and preserving the water pure and free of vegetable growth)—to riprap nearly all the entire extent of the artificial shores of the basin in a most thorough manner.

Our plan seems to be the best possible for preserving and transmitting to Fresh Pond pure water well settled and running over clean sand, gravel and rock the entire length of our basins. The cost has been larger than originally estimated—the results will prove it a good investment.

We believe the Metropolitan Water Supply Commission can get many excellent ideas from Cambridge as to the best way to prepare a large water basin.

As the Board review the work there is nothing we would undo so far as the plans are concerned, and we believe the future will find them what we expect.

A keeper's house is being built near the Lincoln Street dam and will soon be completed. It stands in a most sightly place over looking both basins.

Bill for Preventing Pollution.

In connection with this work, the Board felt that some more legislation was necessary for the proper protection of the basin and the tributaries from pollution. This was called to your attention in our report last year, and acting under your authority the Mayor petitioned the Legislature last winter for more adequate protection. We are pleased to state that a bill was drawn by the City Solicitor, and under his care and with the assistance of Hon. W. B. Durant, was adopted by the last Legislature, which gives, as we believe, the necessary means of protection to our water supply and will act as a warning, with danger of fine and imprisonment, to anyone polluting waters taken for public use. This bill gives the State Board of Health power to act independent of local boards, who have, in some cases, been so negligent of their duty to protect the public health in connection with water supplies. We are happy to state that Waltham, Lexington and Weston have indicated a cordial desire to co-operate with us in protecting our basins and sources of supply from pollution, and the Cambridge bill, which was adopted by the Legislature early in the year, was most favorably and warmly endorsed by all the Water Works Associations of our state. Cambridge has been thanked for her aggressive and successful work in this matter.

Pumping Station.

On account of the new pumping engine and alterations in the building, an entirely new floor and supports are necessary. The work is under way, but can hardly be completed before early spring of next year.

Work in altering one of the ten million gallon pumps is progressing. It is planned to alter the plungers in both ten million gallon pumps, making them about six million gallons each. They can then be used as relief pumps in case of accident to the new engine.

Renewals and Extensions.

The length of pipe used in renewals of old mains the last year has been seven miles, extensions about two miles. Most of these renewals were in place of pipe between thirty and forty years old; some of these were the original pipe laid in 1855 and 1856. We shall require about the same amount for another year as last year for renewals and extensions.

The total length of mains is now about 130 miles. For details of this department we refer you to the Superintendent's report.

The cost of renewing old pipes has been $44,001.16, and extensions, $8,719.29. As compared with 1896, the amount expended on renewals has been $4,998.84 less, and on extensions $11,280.71 less.

Cambridge Reservoir.

The standpipe has not been used for twelve months, the high service having been supplied from Payson Park Reservoir. The low service still comes from the old reservoir. As soon as the entire city receives its service from Payson Park Reservoir there will be no use for the old reservoir that we can now see. The site for building purposes will be valuable.

Dual System.

The Water Board believe the dual system should receive more careful attention by the City Council than has been given to it. If cities in Europe, where economy and best results as to water supply, have adopted the plan after careful study, and situated relatively not so well as Cambridge is, the suggestion can hardly be visionary or impracticable.

Two members of this Board have, within three years, visited Frankfort, Germany, and examined the dual system there and

believe it can be adopted by Cambridge with very satisfactory results.

We repeat our recommendations as preliminary to this, but involving no expense at present, that the City Council authorize the Mayor to petition the next Legislature for the right to take water from Charles River for other than domestic purposes. This can do no possible harm nor does it commit the city to the dual system until fully investigated and approved.

The utilization of the Mystic supply for other than domestic purposes is being already considered by the Metropolitan Water Commission, and is directly in the line of what has been now repeatedly suggested by this Board. The only action taken as yet by the City Council was to lay our last recommendation on the table.

Stony Brook System

Is in excellent condition under the continued care of Mr. Silas Baxter, whose faithful services there the last eight years are duly appreciated.

Drinking Fountains.

By suggestion of Acting Superintendent Brooks, and prompt approval by the City Council, the Water Board have placed three ice water drinking fountains in Harvard Square, Central Square and Cambridge Street near Third Street, and have directed another to be placed in Ward 5 next year. These fountains have proved very satisfactory and seem to be fully appreciated by our citizens.

Fresh Pond.

The lowest water in the pond this year was on December 1, 1896, at grade 11.41. The present height is 15.38, or only 1½ feet below high water mark—16.85. The water of the pond has been frequently analyzed the past year and is reported to be in excellent condition.

Little work has been done around the pond on account of the City Council making inadequate appropriations.

The work on the westerly side of the pond, bordering Huron

Avenue, should be completed without unnecessary delay and the further plans as to improvement can be regulated as surplus funds permit.

Fitchburg Railroad Tracks at Fresh Pond.

In April, 1897, authority was given by the Legislature to take the rights, property and easements of the Fitchburg Railroad within the Fresh Pond area.

By agreement, the city is to pay the Fitchburg Railroad five cents per foot for the land with four per cent interest from the time the agreement was made. In addition, the city is to pay fifty cents per lineal foot for the removal of the tracks, making the total cost to the city about $9,200. The deeds are prepared and settlement will soon be made, and then the city will control every foot of land within the Fresh Pond Park area.

Overflow at Stony Brook.

The overflow from December 1, 1896, to December 1, 1897, has been 3,999,700,000 gallons, or twenty months' supply on present basis of consumption. This is less than last year, but shows how large the wastage of water continues to be.

Although the rainfall for this year is five inches less than for the year preceding, it came largely during the summer months when the ground was very dry and a large amount of water was absorbed before any could go to waste over the dam at Stony Brook.

Water Rates.

Several meetings of the Committee on Water Supply were held this year as to revision of water rates, with the very wise result that no change has been made.

As soon as the work now about completed is all paid for and we can see just what our fixed charges will be and what probability there is of having soon to put another main from Stony Brook to Fresh Pond, we can then advise as to a readjustment of water rates.

As we review the work now substantially completed, it is with feelings of satisfaction that, so far as can now be anticipated, our city is assured of an ample supply of good water for many years to come—or until the consumption reaches over twenty million gallons daily.

Our daily average consumption has been, the past year, 6,688,603 gallons, or only 100,000 gallons per day more than last year.

General Remarks.

It would be a good investment and a wise move if the different water works of the country contributed a small amount each year to be distributed in premiums to inventors of improved appliances in connection with water supplies, especially those of an automatic character to prevent waste of water.

The great saving of water made in connection with the best modern methods of plumbing over the old and clumsy ones is sufficient argument in this direction.

Office Work.

The work of the office continues to be satisfactorily discharged under the care of our Water Registrar, Mr. W. H. Harding. The employees have been faithful, careful and courteous in their work, which increases each year, but no more clerks have been added to the force for two years.

The bills for water rates the last year, as made out in the office, amount to $299,854.32, or $10,000 more than last year, of which only $434.53 remain unpaid. The unpaid bills are for additional fixtures and metered water. All bills for annual rates are paid. We think it would be difficult to find a city of the size of Cambridge with such a showing as this. Promptness in sending out the bills and vigilance as to delinquents are essential to satisfactory results, and this will indicate the watchful care exercised in the Registrar's department.

Mr. E. C. Brooks has continued to discharge the double duty of Superintendent and Chief Engineer most satisfactorily. This has been possible because Hobbs Brook Basin has, in the work of construction, been under the superintendence of the City Engineer. But with our large system now completed and the largely increased work required at the Pumping Station, it will be necessary another year to divide the work—when Mr. Brooks will take general care of the entire system. A thoroughly competent man has been selected for Chief Engineer and will assume charge at the Pumping Station early another year. It is of great value to the city that the Superintendent of our water works is so familiar with every department and in case of emergency can fill any position of responsibility connected with the entire system.

The Assistant Superintendent, Mr. C. B. Parker, has very satisfactorily discharged his duties. The Finance Committee, in the summer, increased his salary $300—to $1,500 per year—a fitting recognition of his services. It was done upon the recommendation of the Water Board. His duties are constantly increasing and may demand service at any hour of the night or day.

His Honor, the Mayor, has accompanied us on several of our regular visits to Hobbs Brook Basin, and we have found his advice and suggestions of value and our mutual relations of a very cordial character.

The City Council has shown the utmost consideration and courtesy in all our suggestions and has honored us with its constant and cheerful support.

The utmost harmony of feeling prevails among the members of the Board. As we review the great responsibility entrusted to us in the development of the water system, involving, as it did, a larger plan and more difficult problems than our predecessors ever had to consider, it is a great source of gratification that the councils and decisions of the Board have been so harmonious. This, we are sure, has been greatly for the advantage of the city. The gratuitous service this Board renders is cheerfully given and

the most satisfactory reward is the undiminished confidence of our fellow citizens, which we are sure we have.

The Board hope, as we start on a new year of larger possibilities than ever before, the same harmony may prevail.

JAS. M. W. HALL,
STILLMAN F. KELLEY,
FRANK A. ALLEN,
GEO. H. HOWARD,
WELLINGTON FILLMORE,
} *Cambridge Water Board.*

REPORT OF THE WATER REGISTRAR

WATER REGISTRAR'S OFFICE,
CAMBRIDGE, December 7, 1897.

To the Cambridge Water Board: —

Gentlemen:—In compliance with the requirements of the City Ordinance, I present the thirty-third annual report of the operations of this department, showing the receipts, expenditures and abatements, together with a statement of the number of water takers, etc., for the year ending November 30, 1897.

Amount of bills remaining unpaid Nov. 30, 1896:

Water rates	$181.00
Meter rates	2,189.71
Supplies and repairs	2,525.21
Off and on	108.00
Seals	5.50
Rents	680.47
Maintenance account	594.82
Construction account	125.68

Amount of bills placed in hands of City Treasurer for collection, from November 30, 1896, to December 1, 1897:—

Water rates	$221,841.99	
Meter rates	75,642.62	
Supplies and repairs	7,349.07	
Off and on	467.00	
Seals	135.00	
Rents	834.55	
Maintenance account	2,912.61	
Construction account	1,542.49	
Total bills		$317,135.72

There has been collected:—

Water rates	$217,819.28
Meter rates	76,445.27
Off and on	445.00
Seals	125.75
Supplies and repairs	7,512.46
Rents	807.89
Maintenance account	3,130.51
Construction account	1,500.14

There has been abated:—

Water rates, off and on, seals and rents	$5,507.73	
Supplies and repairs	917.54	
Maintenance account	344.42	

There remains unpaid:—

Water rates	$221.66	
Meter rates	550.35	
Supplies and repairs	1,444.28	
Off and on	122.00	
Seals	14.25	
Rents	26.66	
Maintenance account	32.50	
Construction account	168.03	
		$317,135.72

Expenditures.

Construction account (general)	$11,284.37	
Construction account (Fresh Pond Reservoir)	16,972.74	
Construction account (Hobbs Brook Reservoir)	398,187.52	
Construction account (Payson Park Reservoir)	70,760.24	
Maintenance account (general)	26,036.34	
Maintenance account (office)	5,634.53	
Maintenance account (pumping)	15,030.58	
Maintenance account (renewal of main pipe)	32,579.46	
Maintenance account (Stony Brook Reservoir)	1,048.98	
Supply account	6,376.33	
		$583,911.09

Abatements.

Water rate bills to the amount of	$4,827.26	
Rent bills to the amount of	680.47	
Maintenance bills to the amount of	344.42	
Supply and repair bills to the amount of	917.54	
		$6,769.69

Refunds.

Water rates to the amount of	$2,806.93	
Which amount deducted from the receipts	294,264.55	
Leaves net receipts for water	$291,457.62	
Add off and on, rents, seals and maintenance account	4,509.15	
Makes net receipts of "rates, fines, etc."		$295,966.77

Off and On.

Water has been shut off for non-payment of rates or per order on account of vacancy, and seals have been applied to fixtures by request of owners, as follows:—

Water shut off in 1897	551
Supplies let on, shut off in 1897	354
Supplies let on, shut off in previous years	80
New supplies let on	418
Seal locks applied to fixtures in 1897	1154
Seal locks removed, put on in 1897	601
Seal locks removed, put on in previous years	462

Twenty-two supplies shut off are in Somerville and are in addition to sixty-eight shut off last year, making ninety supplies formerly supplied by Cambridge now supplied by the City of Somerville, from the Mystic system. There have also been twenty supplies shut off and the buildings removed, due to the extension of the "yard" of the Boston & Maine Railroad, in East Cambridge.

Statement of the yearly revenue received from water rates since the purchase of the works by the city:—

From April 28, 1865, to December 1, 1865	$32,367.19
From December 1, 1865, to December 1, 1866	40,073.27
From December 1, 1866, to December 1, 1867	52,733.62
From December 1, 1867, to December 1, 1868	63,747.42
From December 1, 1868, to December 1, 1869	76,149.30
From December 1, 1869, to December 1, 1870	92,605.95
From December 1, 1870, to December 1, 1871	111,782.65
From December 1, 1871, to December 1, 1872	127,201.30
From December 1, 1872, to December 1, 1873	146,117.32
From December 1, 1873, to December 1, 1874	153,634.27
From December 1, 1874, to December 1, 1875	138,880.37
From December 1, 1875, to December 1, 1876	179,166.76
From December 1, 1876, to December 1, 1877	154,843.59
From December 1, 1877, to December 1, 1878	157,443.91
From December 1, 1878, to December 1, 1879	164,681.90
From December 1, 1879, to December 1, 1880	173,325.49
From December 1, 1880, to December 1, 1881	170,062.73
From December 1, 1881, to December 1, 1882	177,430.80
From December 1, 1882, to December 1, 1883	179,361.89
From December 1, 1883, to December 1, 1884	161,526.27
From December 1, 1884, to December 1, 1885	185,544.36
From December 1, 1885, to December 1, 1886	193,404.43
From December 1, 1886, to December 1, 1887	204,748.64
From December 1, 1887, to December 1, 1888	211,156.27
From December 1, 1888, to December 1, 1889	221,124.70
From December 1, 1889, to December 1, 1890	231,116.32
From December 1, 1890, to December 1, 1891	227,054.53
From December 1, 1891, to December 1, 1892	237,527.08
From December 1, 1892, to December 1, 1893	242,219.78
From December 1, 1893, to December 1, 1894	250,032.71
From December 1, 1894, to December 1, 1895	268,813.62
From December 1, 1895, to December 1, 1896	281,030.00
From December 1, 1896, to December 1, 1897	291,457.62

Comparative Statement — Water Registrar.

	1896.		1897.	
CONSTRUCTION ACC'T (PAYSON PARK RESERVOIR)				
Received.				
From bonds issued .	$320,000 00		$75,000 00	
From premium on bonds sold . . .	21,120 50		3,000 00	
Overtime on pay rolls etc.	17 40			
Sale of transit and old material . .			419 86	
		$341,137 90		$78,419 86
Expended.				
Construction of reservoir, pumping engine, etc., etc. .	$318,434 54		$70,760 24	
Balance of appropriation	22,703 36		7,659 62	
		$341,137 90		$78,419 86
CONSTRUCTION ACC'T (HOBBS BROOK RESERVOIR)				
Received.				
From bonds issued .	$411,000 00		$400,000 00	
From sale of grass, feed, wood, old material, etc., etc. .	119 50		691 55	
From premium on bonds sold . . .	20,217 00		7,672 00	
		$431,336 50		$408,363 55
Expended.				
Construction of reservoir, land settlements, etc., etc. .	$361,611 89		$398,187 52	
Balance of appropriation	69,724 61		10,176 03	
		$431,336 50		$408,363 55
CONSTRUCTION ACC'T (FRESH POND RESERVOIR).				
Received.				
From bonds issued .	$46,000 00			
From excess of receipts from "rates, fines, etc." . . .	20,000 00		$16,972 74	
From premium on bonds sold . .	5,396 79			
		$71,396 79		$16,972 74
Expended.				
For filling, grading and planting at Fresh Pond . .	$65,991 86		$16,972 74	
Balance of appropriation	5,404 93			
		$71,396 79		$16,972 74

Comparative Statement Water Registrar — Concluded.

	1896.		1897.	
CONSTRUCTION ACC'T (GENERAL).				
Received.				
From bonds issued .	$20,000 00		$12,500 00	
From sale of old iron, etc.	21 00	$20,021 00	49 30	$12,549 30
Expended.				
Sundry bills . . .	$19,902 53		$11,284 37	
Balance of appropriation.	118 47		1,264 93	
		$20,021 00		$12,549 30
MAINTENANCE ACC'T				
Received.				
From "rates, fines, etc."	$283,03 58		$292,836 26	
From sale of grass, old material, etc. .	504 58		3,130 51	
Accrued interest on water bonds sold .	1,899 34	$285,439 50	892 00	$296,858 77
Expended.				
Care and repairs .	$95,719 75		$80,329 89	
Interest on water debt	89,225 00		105,134 00	
Paid to sinking fund commissioners . .	77,542 50		91,091 00	
		$262,487 25		$276,554 89
Excess of receipts .		$22,952 25		$20,303 88
SUPPLY ACCOUNT.				
Received.				
From pipe and labor on supplies . .		$7,218 56		$7,512 46
Expended.				
Sundry bills for stock and labor . . .		$6,482 62		$6,376 33
Excess of receipts .		$735 94		$1,136 13

1896.	Maintenance account, excess of receipts	$22,952 25	
	Supply account, excess of receipts . .	735 94	
	Excess of total receipts over total expenditures	$23,688 19	
	Transferred to Construction Account (Fresh Pond Reservoir)	20,000 00	
	Balance due the Sinking Fund . .		$3,688 19
1897.	Maintenance Account, excess of receipts	$20,303 88	
	Supply Account, excess of receipts . .	1,136 13	
	Excess of total receipts over total expenditures	$21,440 01	
	Transferred to Construction Account (Fresh Pond Reservoir)	16,972 74	
	Balance due the Sinking Fund . .		$4,467 27

The excess of receipts for 1897, as shown in the above comparative statement, amounting to $4,467.27, has been carried to the Sinking Fund, as required by law.

In addition to the manufactories, etc., supplied through meters, water is supplied to 19,635 families, 967 stables, with 3,304 horses and 219 cows; 313 shops; 851 offices and stores, by the following fixtures, viz:—

23,398 faucets,	5 hopper closets,
7,867 wash basins,	89 urinals,
9,322 wash tubs,	17 yard hydrants,
6,452 bath tubs,	5 fountains,
433 slop closets,	46 tumbler washers,
19,095 pan closets,	2,010 hand hose,

12 motors.

Also,

933 fire hydrants (besides 19 on private premises),
8 fire reservoirs,
26 drinking fountains in public squares,
59 street watering standpipes,
4 public sanitaries.

The above schedule of fixtures does not include those in school houses, engine houses, police stations, and other city buildings, or where the use of water is covered by a meter.

The customary house-to-house inspection of the service pipes and fixtures on the premises of the water takers has been made with the usual satisfactory and remunerative results.

Every bill for annual water rates, amounting in the total to $213,347.25, has been paid. The only water rate charges, made in 1897, remaining unpaid, are for additional fixtures and for metered water, to the amount of $434.53, out of a total of nearly $298,000.00.

Respectfully submitted,

WALTER H. HARDING,

Registrar.

ANNUAL STATEMENT OF THE WATER REGISTRAR TO THE COMMITTEE ON ACCOUNTS

December 1, 1897.

Water rates unpaid November 30, 1896		$2,370.71
Off and on bills unpaid November 30, 1896		108.00
Rent unpaid November 30, 1896		680.47
Seals unpaid November 30, 1896		5.50
Maintenance account unpaid November 30, 1896		594.82
Construction account unpaid November 30, 1896		125.68
		$3,885.18
Bills placed in hands of City Treasurer for collection, from December 1, 1896, to December 1, 1897:—		
Water rates from annual ledgers	$210,953.25	
Water rates from fractional ledger	10,888.74	
Water rates from meter ledger	76,642.62	
Off and on water	467.00	
Rents	834.55	
Seals	135.00	
Maintenance account	2,912.61	
Construction account	1,542.49	
		303,376.26
Total bills on "Rates, fines, etc.," Maintenance and Construction accounts,		$307,261.44
Supply and repair bills unpaid November 30, 1896	$2,525.21	
Supply and repair bills placed in hands of City Treasurer for collection from November 30, 1896, to December 1, 1897	7,349.07	
		$9,874.28
Total bills		$317,135.72
There has been collected:—		
Annual ledgers	$209,484.45	
Fractional ledger	8,334.83	
Meter ledger	76,445.27	
Off and on ledger	445.00	
Rent ledger	807.89	
Seal ledger	125.75	
Maintenance account	3,130.51	
Construction account	1,500.14	
Supply and repair account	7,512.46	
Total collections		$307,786.30

There has been abated:—

Water rates, off and on, seals and rent	$5,507.73	
Maintenance account	334.42	
Supply account	917.54	
		6,769.69

There remains uncollected:—

Water rates	$772.01	
Supplies and repairs	1,444.28	
Off and on	122.00	
Seals	14.25	
Rent	26.66	
Maintenance account	32.50	
Construction account	168.03	
		2,579.73
		$317,135.72

Total bills for collection		$317,135.72
Less abated	$6,769.69	
Less refunded	2,806.93	
Less unpaid	2,579.73	
		12,156.35
Net receipts		$304,979.37

Attest: WALTER H. HARDING,
Registrar.

CAMBRIDGE, December, 13, 1897.

We have examined the accounts of the Water Registrar and find that they correspond in the amounts collected, abated, refunded and uncollected with the statement submitted by the City Treasurer and verified by the City Auditor.

FRANK A. ALLEN,
STILLMAN F. KELLEY, } *Committee on Accounts.*

CITY OF CAMBRIDGE,
OFFICE OF CITY TREASURER.
December 1, 1897.

To the Cambridge Water Board :—

Gentlemen:—I give you herewith a record of the transactions between the Water Office and the City Treasurer's Office during the year ending November 30, 1897.

Gross collections for account of Water Works, "Rates, fines, etc."	$301,150.92
Abatement certificates received and paid on "Water Rates" . . .	5,852.15
Gross collections for account of Water Works, "Supply Account" .	8,430.00
Abatement certificates received and paid on "Supply Account" . .	917.54
"Refund" certificates have been presented and paid to the amount of	2,806.93
Uncollected bills in my hands November 30, 1897, for account of "Maintenance, Construction and Water rates," amount to . . .	1,135.45
Uncollected bills in my hands November 30, 1897, for account of "Supplies, Repairs, etc.," amount to	1,444.28
Gross Collections for account of Water Works, "Construction, General Account"	339.43
Gross collections for account of Water Works, "Construction, Hobbs Brook Reservoir Account"	691.55
Gross collections for account of Water Works, "Construction, Payson Park Reservoir Account"	469.16
Gross collections for account of Water Works, "Maintenance, General Account"	3,474.93

Very respectfully,

WM. W. DALLINGER,
City Treasurer.

I have examined the above statement and find it correct.

HARRY T. UPHAM,
City Auditor.

REPORT OF THE SUPERINTENDENT OF WATER WORKS

CAMBRIDGE, December 1, 1897.

To the Honorable the Water Board of the City of Cambridge: —

Gentlemen:—Complying with the City Ordinance, I herewith submit the thirty-third annual report of the Superintendent, for the year ending November 30, 1897.

Consumption.

The total quantity of water pumped during the past year was	2,441,340,196	gallons.
High service	292,688,746	gallons.
Low service	2,148,651,450	gallons.
Daily average water pumped during the year,	6,688,603	gallons.
High service	801,887	gallons.
Low service	5,886,716	gallons.
Quantity of water sold by meter	573,060,250	gallons.
Quantity of water used for sprinkling streets	88,846,600	gallons.
Quantity of water used for flushing sewers	1,250,000	gallons.
Quantity of water used for cleaning sanitaries	7,500,000	gallons.
Quantity of water used for drinking fountains	30,326,000	gallons.
Total	700,982,850	gallons.
Leaving for domestic purposes	1,740,357,346	gallons.

Number of gallons daily for each inhabitant on the total amount pumped, 76.46.

Number of gallons daily for each inhabitant on the amount used for domestic purposes, including water for private stables, hose, building and fire purposes, 54.50.

Comparative Statement of Total Pumping During the Past 8 Years.

Date.	Total Yearly Pumping,	Increase or decrease	Average Daily Pumping.	Increase or decrease.	Gallons to each inhabitant daily.
1890	1,638,550,512	112,111,507 incr'se	4,489,178	307,155, increase.	62.35
1891	1,778,056,775	139,506,263 "	4,871,388	382,210, "	64.71
1892	1,961,362,760	183,305,985 "	5,358,914	487,526, "	66.00
1893	2,234,863,924	273,501,164 "	6,122,915	764,001, "	74.50
1894	2,127,878,627	106,985,297 decr'se	5,829,804	293,111, decrease.	69.19
1895	2,190,781,892	62,903,265 incr'se	6,002,142	172,338, increase.	71.65
1896	2,413,506,557	222,724,665 "	6,594,280	592,138, "	75.90
1897	2,441,340,196	27,833,639 "	6,688,603	94,323, "	76.46

Comparative Statement of Domestic Pumping During the Past 8 Years.

Date.	Domestic Yearly Pumping	Increase or Decrease.	Average Daily Pumping.	Increase or Decrease.	Gallons to each Inhabitant daily.
1890	1,217,062,012	61,140,305, incr'se	3,334,416	167,507, increase	46.08
1891	1,270,360,425	53,298,413, "	3,480,439	146,023, "	46.24
1892	1,426,400,135	156,039,710 "	3,897,268	416,829, "	48.00
1893	1,668,235,574	241,835,439, "	4,570,509	673,241, "	55.61
1894	1,547,943,977	120,291,597, decr'se	4,240,942	329,567, decrease	50.34
1895	1,530,152,817	17,791,160, "	4,192,199	48,743, "	50.04
1896	1,730,224,007	200,071,190, incr'se	4,727,388	535,189, increase	54.42
1897	1,740,357,346	10,133,339 "	4,768,102	40,714 "	54.50

Total amount of coal consumed (in lbs.)	3,870,000
Daily average coal consumed, ...	10,603
Coal consumed per million gallons pumped . . .	1,585.41

Highest water in Fresh Pond was on June 11, 1897 .	17.34
Lowest water in Fresh Pond was on Dec. 1, 1896 .	11.41
Highest water in Stony Brook Reservoir was on March 25, 1897	82.00
Lowest water in Stony Brook Reservoir was on Nov. 1, 1897	71.02
Daily average height of water in Fresh Pond . .	15.16
Total rainfall at Fresh Pond Pumping Station . .	42.53
Total rainfall at Stony Brook Reservoir	43.35

Total Rainfall for the Last Ten Years.

Month.	1888	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.
	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
December . .	4.22	6.67	3.30	4.40	6.78	1.23	5.23	4.43	1.90	1.63
January . . .	3.32	6.64	2.94	6.68	4.32	1.87	3.05	3.57	2.46	3.32
February . .	3.95	2.81	5.22	4.61	2.46	6.43	2.91	1.07	5.62	2.36
March . . .	5.55	3.29	7.02	5.74	3.56	2.50	0.84	2.68	4.37	2.66
April	2.60	3.73	4.83	2.72	0.77	3.25	2.94	4.15	1.70	2.82
May	6.36	5.65	6.09	2.44	6.06	7.30	4.63	2.39	2.42	4.24
June	3.25	3.44	3.51	4.01	4.23	2.18	0.81	2.76	2.33	5.16
July	2.87	8.53	2.77	3.06	2.53	2.26	2.88	3.28	2.65	4.68
August . . .	7.08	3.78	3.48	3.68	6.11	5.95	1.63	4.71	2.45	5.06
September . .	8.28	5.30	4.05	2.73	1.84	1.76	2.40	1.83	6.29	3.22
October . . .	4.83	3.73	9.31	5.10	2.15	3.77	5.19	10.16	3.10	.55
November . .	7.70	6.51	1.28	3.08	4.04	1.99	3.34	6.09	3.53	6.83
Total	60.01	60.08	53.80	48.25	44.85	40.49	35.85	47.12	38.82	42.53

Fresh Pond and Surroundings.

The work around the pond, such as cutting the grass on the banks, along the driveway and around the borders of the pond, and the care of the roads and walks, has received the usual attention.

The past season has been very favorable for the growth of the shrubs and plants, and the nursery and the planted section have required considerable work for their proper care.

The roadway has received a slight coating of stone dust where most needed. Our supply of gravel suitable for surfacing the road is exhausted, and I would recommend that a quantity of stone dust be purchased for this purpose.

The water in the pond has been at an average height of 15.16 feet during the year and has been of very good quality, some slight trouble during the hottest weather being caused by the microscopic growth, Clathrocystis.

The work of filling and grading around the pond did not begin until October 4th and continued until December 1st; all of the work done being on the west side—a continuation of that begun last year.

The stable on Concord Avenue has been shingled and the buildings are in good condition, but will need painting the coming year.

Fresh Pond Reservoir.

	Lowest Point Reached During Month	Highest Point Reached During Month	Monthly Rainfall, Inches.	Intake Gate.			
				8 Inch Opening.		30 Inch Opening.	
				Opened.	Closed.	Opened 12 Inches.	Closed.
December 1, 1896	11.41		1.63	During entire month.		During entire month.	
" 31, "		12.32					
January 1, 1897	12.35		3.32	During entire month.		January 16.	January 12.
" 13, "		12.91				January 29.	January 16.
February 1, "	12.88		2.36	During entire month.		During entire month.	
" 28, "		14.01					
March 1, "	14.05		2.66	During entire month.		During entire month.	
" 31, "		15.50					
April 1, "	15.52		2.82	During entire month.		During entire month.	
" 28, "		16.39					
May 1, "	16.37		4.24	During entire month.		May 24.	May 17.
" 31, "		16.99					May 27.
June 11, "		17.34	5.16	During entire month.			During entire month.
" 29, "	16.67						
July 1, "		16.72	4.68	During entire month.			During entire month.
" 21, "	16.27						
August 7, "		16.50	5.06	During entire month.			During entire month.
" 22, "	16.23						
September 3, "		16.30	3.22	During entire month.			During entire month.
" 30, "	15.78						
October 1, "		15.76	.55		October 17.		During entire month.
" 31, "	14.73			October 19.			
November 1, "	14.73		6.83	During entire month.			During entire month.
" 30, "		15.38					
Total			42.53				

Pumping Station and Surroundings.

The buildings are in good condition. The grounds have received no further attention in the way of planting shrubs, as the work on the alterations to the building, putting in the new boilers, the erection of the new engine, connecting the new forty-inch pumping main and setting the forty-inch Venturi meter, have prevented.

Reservoir.

The Highland Street Reservoir has received the usual attention and is in good condition.

Payson Park Reservoir.

The high service has been supplied from this reservoir during the whole of the past year. During the summer the water was drawn off from the north basin and a thorough examination of the bottom and sides made and the basin thoroughly cleaned of all sediment.

The work of grading the banks, loaming, seeding and sodding the same, was begun May 19th and finished August 7th.

A small amount of work remains to be done around the steps leading to the gate house.

A neat iron fence has been erected around the top of the banks, inside of the walk.

I recommend that a tool house be built the coming year.

Pipe Yard.

The stable at the pipe yard has been shingled and other light repairs done to make it last until something better could be provided. The building is in bad condition and the whole arrangement of the buildings such that the fire risk is very great. The shed and stable are all of wood and connected together in such a manner that should a fire occur the whole of the buildings would be destroyed.

I recommend that a new brick stable be built that will afford the very much needed accommodations.

Pipe Bridges.

The pipe bridge on Massachusetts Avenue over the Fitchburg Railroad tracks has been rebuilt by the Metropolitan Water Board in consideration of their using part of it with the Cambridge Gas Light Company and the city. The expense to the Water Works was $37.50.

The bridge at Mt. Auburn has been removed and the supply of water for that section is now coming from the forty-eight inch main in Cushing Street. This removal was made necessary by the repairs and alterations to the bridge.

The Brookline Street bridge will need repairing if it is to be maintained. I think a connection to the Metropolitan pipe in Central Square would be a better safeguard in case of accident, and also avoid the cost of maintaining the bridge and syphon.

Main Pipe.

The connections with the 40-inch main have been made as follows: The 24-inch in Cambridge Street, the 24-inch in Craigie Street, the 20-inch in Mt. Auburn Street, and the 20-inch in Reservoir Street; so that at present the large main is in use from the connecting chambers in Huron Avenue to the Common.

All the cement pipe throughout the city is now out of use. The gates on the several lines have been removed.

The continuation of the 48-inch Metropolitan supply main up Massachusetts Avenue from the Common was carried under all the pipes in the cross streets below the railroad; above that point the pipes were offset under the main.

Main pipes have been laid in the following streets: 59 feet of 6-inch in Appian Way; 10½ feet of 10-inch and 136 feet of 6-inch in Appleton Street; 17 feet of 6-inch in Ash Street; 888½ feet of 6-inch in Avon Street; 708½ feet of 6-inch in Banks Street; 15 feet of 6-inch in Bay Street; 724 feet of 6-inch in Blanche Street; 13 feet of 6-inch in Bolton Street; 519 feet of 4-inch and 7 feet of 6-inch in Bradbury Street; 3,758 feet of 12-inch, 1,647 feet of 10-inch and 34 feet of 6-inch in Brattle

Street; 428 feet of 4-inch in Bristol Street; 10 feet of 20-inch in Broadway; 2,081 feet of 8-inch and 26½ feet of 6-inch in Brookline Street; 17 feet of 6-inch in Brown Street; 822 feet of 6-inch in Buckingham Street; 1,207 feet of 8-inch in Cambridge Street; 189 feet of 6-inch in Cameron Street; 231 feet of 1½-inch in Central Place; 12 feet of 6-inch in Centre Street; 33 feet of 6-inch in Channing Street; 642½ feet of 6-inch in Chauncy Street; 615½ feet of 6-inch in Chilton Street; 64 feet of 6-inch in Cleveland Street; 685 feet of 6-inch in Cogswell Avenue; 14 feet of 4-inch in Cogswell Place; 554 feet of 12-inch and 583 feet of 10-inch in Concord Avenue; 13 feet of 6-inch in Cowperthwaite Street; 20 feet of 4-inch in Crossland Street; 215 feet of 12-inch in Cushing Street; 2,194 feet of 6-inch in Dana Street; 13 feet of 6-inch in Decatur Street; 176 feet of 6-inch in Donnell Street; 269 feet of 6-inch in Dudley Street; 444½ feet of 6-inch in Dunster Street; 202 feet of 6-inch in Elmwood Street; 82 feet of 6-inch in Erie Street; 514 feet of 6-inch in Eustis Street; 154 feet of 4-inch in Farrar Street; 153 feet of 4-inch in Fayette Park; 118 feet of 6-inch in Fenno Street; 40 feet of 4-inch in Flagg Street; 755 feet of 8-inch and 1,286½ feet of 6-inch in Fourth Street; 163 feet of 6-inch in Franklin Street; 928 feet of 10-inch and 292 feet of 6-inch in Garden Street; 153 feet of 6-inch in Glenwood Avenue; 50 feet of 6-inch in Gore Street; 208 feet of 6-inch in Grove Street; 18 feet of 6-inch in Harding Street; 12 feet of 12-inch in Harvard Street; 148½ feet of 6-inch in Harwich Street; 30 feet of 6-inch in Hawthorne Street; 127 feet of 4-inch in Healey Street; 17 feet of 6-inch in Hilliard Street; 398 feet of 4-inch in Holworthy Street; 462½ feet of 6-inch in Holyoke Place; 519½ feet of 6-inch in Holyoke Street; 32 feet of 6-inch in Howard Street; 1,043 feet of 6-inch in Jay Street; 6 feet of 6-inch in Kennedy Avenue; 2,031½ feet of 6-inch in Kinnaird Street; 832 feet of 6-inch in Langdon Street; 1,313½ feet of 6-inch in Lee Street; 305 feet of 6-inch in Lexington Street; 13 feet of 6-inch in Lopez Street; 28½ feet of 6-inch in Lowell Street; 522½ feet of

6-inch in Madison Avenue; 40 feet of 6-inch in Main Street; 926½ feet of 6-inch in Maple Avenue; 18 feet of 6-inch in Marion Street; 13 feet of 6-inch in Martin Street; 667 feet of 10-inch and 8½ feet of 6-inch in Mason Street; 26 feet of 6-inch in Mead Street; 17 feet of 6-inch in Mercer Circle; 90½ feet of 6-inch in Mill Street; 84 feet of 6-inch in Munroe Street; 387 feet of 6-inch in Murray Street (Charles River Park); 48 feet of 6-inch in Museum Street; 128½ feet of 6-inch in Newell Street; 1,325 feet of 6-inch in Norfolk Street; 92 feet of 2-inch in Norris Way; 326 feet of 6-inch in Nutting Place; 1,970½ feet of 6-inch in Otis Street; 11 feet of 4-inch in Oxford Street; 48 feet of 4-inch in Oxford Street, Ward 2; 161 feet of 6-inch in Park Avenue; 44 feet of 6-inch in Parker Street; 294 feet of 6-inch in Pioneer Street; 452 feet of 6-inch in Porter Road; 27 feet of 6-inch in Railroad Street; 495 feet of 1½ inch in Reservoir Street; 6 feet of 6-inch in Riedesel Avenue; 442 feet of 6-inch in Rutland Street; 149 feet of 6-inch in Seven Pines Avenue; 1,595 feet of 8-inch and 13½ feet of 6-inch in Shepard Street; 1,193 feet of 12-inch in Sherman Street; 974 feet of 12-inch and 221½ feet of 6-inch in Sixth Street; 243½ feet of 6-inch in South Street; 116 feet of 6-inch in Stearns Street; 18 feet of 6-inch in Story Street; 27½ feet of 2-inch in Sycamore Street; 181 feet of 6-inch in Thorndike Street; 13 feet of 6-inch in Valentine Street; 265 feet of 4-inch and 13 feet of 6-inch in Vassal Lane; 46½ feet of 6-inch in Vine Street; 159 feet of 12-inch and 13 feet of 6-inch in Walden Street; 26 feet of 6-inch in Walker Street; 18 feet of 6-inch in Warren Street; 13 feet of 6-inch in Watson Street; 13 feet of 6-inch in West Street; 226 feet of 6-inch in Western Avenue; 140 feet of 6-inch in Whittemore Avenue; 28½ feet of 6-inch in Willow Street; 335½ feet of 6-inch in Winsor Street; 464½ feet of 6-inch in Winter Street; 548½ feet of 6-inch in Winthrop Street.

The size of cast iron pipe laid during the year, their lengths and weight, are as follows:

Size.	Length in Feet.	Weight in Tons.
20 inches	10	.87
12 inches	6,865	266.63
10 inches	3,835½	135.27
8 inches	5,638	120.81
6 inches	28,884½	425.53
4 inches	2,177	18.46
Total	47,410	967.57

For the accommodation of the Metropolitan Water Supply pipe, the 6-inch main pipes in Beech and Norfolk streets have been offset.

The 12-inch main in Massachusetts Avenue, between Waterhouse and Jarvis Streets, has been raised, the pipe having settled during the laying of the 48-inch main by the Metropolitan Water Board.

The 3-inch main in Bristol Street, at Hampshire south, and the 4-inch main in Waverly Street, at Talbot Street, have been relocated at the request of the Superintendent of Sewers, the locations properly belonging to that department.

The City of Somerville having decided to furnish water to the Somerville district, which, until this year, has been supplied by Cambridge, the main pipes in the following streets have been cut off, and in Webster Avenue the 6-inch pipe has been removed: Bedford, Bolton (gates shut), Columbia, Earl, Horace, Medford, (at Warren Street), Oak (cut off Houghton to Prospect), Prospect (on to Houghton Street), Ward, Water, Webster Avenue.

In the following streets the mains have been left on so that the circulation of water may not be impaired: Houghton, Hunting, Meacham, Norfolk, Oak (from Houghton to Cambridge), Russell (the dividing line is in the centre of the street), South (from Hunting to Distill-house), Tremont, Willow, and Webster Avenue (from Prospect to Somerville line).

I recommend that there be laid in the following streets new

lines to take the place of old pipes which have been laid for a number of years, and are in weak condition:

In Allston Street, from Pearl Street to Waverly Street, about 1,400 feet of 6-inch pipe to replace the old 4-inch; in Amory Street, entire length, about 1,200 feet of 6-inch pipe to replace the old 4-inch and 6-inch; in Antrim Street, from Cambridge Street, about 150 feet of 6-inch pipe to replace the old 4-inch; in Arlington Street, from Massachusetts Avenue to Walnut Avenue, about 750 feet of 6-inch pipe to replace the old 4-inch; in Bow Street, from Massachusetts Avenue to Plympton Street, about 650 feet of 6-inch pipe to replace the old 4-inch; in Brown Street, from Brattle Street to Foster Street, about 500 feet of 6-inch pipe to replace the old 4-inch; in Centre Street, from Hancock Street to Dana Street, about 700 feet of 6-inch pipe to replace the old 4-inch; in Clark Street, entire length, about 1,900 feet of 6-inch pipe to replace the old 4-inch; in Cowperthwaite Street, from Banks Street to DeWolf Street, about 600 feet of 6-inch pipe to replace the old 4-inch; in Crossland Street, from Bristol Street to Clark Street, 225 feet of 4-inch pipe to replace the old 4-inch; in DeWolf Street, from Mt. Auburn Street to Cowperthwaite Street, about 700 feet of 6-inch pipe to replace the old 4-inch; in Dodge Street, from Western Avenue to Griggs Street, about 270 feet of 6-inch pipe to replace the old 4-inch and $1\frac{1}{4}$-inch; in Elm Street, from Harvard Street to Cambridge Street, about 2,300 feet of 6-inch pipe to replace the old 4-inch; in Fayette Street, from Broadway to Cambridge Street, about 1,300 feet of 6-inch pipe to replace the old 4-inch; in Flagg Street, from Mt. Auburn Street, about 700 feet of 6-inch pipe to replace the old 4-inch; in Frost Street, from Harris Street to Roseland Street, about 700 feet of 6-inch pipe to replace the old 4-inch; in Gerry Street, from Mt. Auburn Street, about 600 feet of 6-inch pipe to replace the old 3-inch; in Grant Street, from DeWolf Street to Banks Street, about 500 feet of 6-inch pipe to replace the old 4-inch; in Lincoln Street, from Winsor Street to Elm Street, about 700 feet of 6-inch pipe to replace the

old 4-inch; in Market Street, from Broadway to Elm Street, about 1,300 feet of 6-inch pipe to replace the old 4-inch; in Martin Street, from Bowdoin Street to Avon Street, about 500 feet of 6-inch pipe to replace the old 4-inch; in Massachusetts Avenue, from Pleasant Street to Putnam Avenue, 2,600 feet of 12-inch pipe to replace the old 8-inch; in Roseland Street, from Massachusetts Aveue to Frost street, about 500 feet of 6-inch pipe to replace the old 6-inch and 3-inch; in School Street, from Austin Street to Pine Street, and from Winsor Street to Clark Street, about 400 feet of 6-inch pipe to replace the old 4-inch; in Second Street, from Cambridge Street to Gore Street, about 400 feet of 6-inch pipe to replace the old 3-inch; in Suffolk Street, entire length, about 500 feet of 6-inch pipe to replace the old 4-inch; in Union Street, from Hampshire Street to Market Street, about 400 feet of 6-inch pipe to replace the old 4-inch; in Worcester Street, entire, about 500 feet of 6-inch pipe to replace the old 3-inch; in Wright Street, entire, about 600 feet of 6-inch pipe to replace the old 4-inch.

New Supplies.

Three hundred seventy-four new supplies have been laid; the total number of supplies in the city is thirteen thousand five hundred thirteen.

Five hundred fifty-eight supplies have been renewed and five have been extended.

Twenty-six of the supplies renewed (included above) have been enlarged.

Forty-one old supplies have been furnished with sidewalk shut-offs and boxes.

Four hundred fifty-one of the above renewed supplies were laid and connected to the new mains as follows: 8 in Avon Street, 24 in Banks Street, 18 in Blanche Street, 8 in Brattle Street, 5 in Bristol Street, 38 in Brookline Street, 2 in Buckingham Street, 17 in Cambridge Street, 4 in Chauncy Street, 16 in Cogswell Avenue, 3 in Concord Avenue, 21 in Dana Street, 42

in Fourth Street, 1 in Garden Street, 6 in Holyoke Place, 8 in Holyoke Street, 18 in Jay Street, 34 in Kinnaird Street, 15 in Lee Street, 5 in Maple Avenue, 8 in Mason Street, 18 in Norfolk Street, 51 in Otis Street, 7 in Pioneer Street, 17 in Sixth Street, 3 in Shepard Street, 21 in Sherman Street, 9 in South Street, 19 in Winter Street, 5 in Winthrop Street.

The supplies in Mt. Auburn Street and Boylston Street have been cut off from the 4-inch main offset and connected to the 20-inch main, in order to give location to the conduit built by the West End Street Railway Co.

The supplies beyond the Somerville line in the following streets have been cut off; the City of Somerville now supplies this district: Bedford, Bolton, Chester, Columbia, Day, Dover, Earl, Elm, Forest, Harding, Horace, Houghton, Hunting, Meacham, Medford, Norfolk, Oak, Prospect, Russell, South, Tremont, Ward, Water, Webster Avenue, Willow.

The supplies in Beech and Norfolk Streets have been offset around the Metropolitan supply pipe.

Drinking Fountains.

Three new ice water drinking fountains have been set during the past year. These are the first ice water fountains that have been used in Cambridge, and it is the intention of the Water Board to supply the cooled water from the middle of May to the first of November, or thereabouts.

The fountains are of "Jenks" make and are located as follows: One on the north side of Central Square; one on the easterly side of Harvard Square, near Dane Hall; and one on Cambridge Street, near the corner of Third Street.

One ice water fountain and one drinking fountain of the usual design will be placed during the year in Ward 5.

There are twenty-six fountains in the city.

Street Watering Standpipes.

No additions to the street watering standpipes have been made during the year; there are fifty-nine in use.

High Service.

By setting the six-inch check valve (formerly located at Hancock, corner of Harvard Street) at the corner of Broadway, Hancock street has been placed on the high service.

Ellery Street is now supplied by the high service; the gate at Massachusetts Avenue is shut.

Claverly Hall is now connected to the high service.

Remington and Ware Streets have been connected to the high service.

Leakage.

Eleven hundred ninety-one leaks have been investigated and stopped. Of these, ten hundred fifty-seven were found by the inspectors while making the annual canvass and have been repaired by owner or occupant. Three were on four-inch mains; four on six-inch mains; one on an eight-inch main; two on twenty-inch cement and one on twenty-inch iron mains; one on thirty-inch main in Mt. Auburn Street near Cottage Street, Watertown (on the Stony Brook pipe line); and one hundred twenty-two were on supplies on premises.

Table Showing a Gain or Loss in Total Consumption for the Year 1897 over 1896.

	Total Consumption 1897.	Total Consumption 1896.	Increase or Decrease x or —
December,	216,367,481	200,258,200	x 16,109,281
January,	222,050,83	241,778,675	— 19,727,845
February,	190,232,540	213,494,500	— 3,261,960
March,	202,428,145	211,862,820	— 434,675
April,	197,402,58	178,664,380	x 18,738,205
May,	191,350,040	200,833,380	— 9,483,340
June,	195,727,510	05,292,825	— 9,565,315
July,	215,121,905	206,993,245	x 8,128,660
August,	210,523,365	202,378,452	x 8,144,913
September,	208,745,405	188,293,415	x 20,451,990
October,	209,623,410	184,892,415	x 24,730,995
November,	181,766,980	178,764,250	x 3,002,730
Total . .	2,441,340,196	2,413,506,557	x 27,833,639

Gates.

The annual inspection of the gates has been made, and as usual, their locations plainly indicated.

The six-inch gate at Massachusetts Avenue, corner of Pearl Street, has been removed.

In Washburn Terrace the gate has been abandoned.

A new six-inch gate has been set in Brookline Street to replace an old one broken, and in Brewer, at the corner of Mt. Auburn Street, a three-inch gate has been set in place of the old broken one.

Attending the shutting off the main and supply pipes in the Somerville district, formerly supplied by Cambridge, the gates in Columbia Street and at the corner of Earl and South Streets have been cut out.

Boxes.

Four hydrant, eight wooden and fifteen iron gate boxes have been set in locations where worthless ones have been removed.

Meters.

There are three hundred eighty-one meters in use in the city.

Hydrants.

Twenty-four hydrants have been set this year in new locations.

There are nine hundred thirty-three hydrants; of this number nineteen are on private premises.

Three Chapman hydrants have been set to take the place of three Chapman posts broken by runaway teams, located as follows: Third Street, corner of Spring Street; Cambridge Street, corner of First Street; and Sixth Street.

The hydrants in the Somerville district have been removed, as follows: At Oak Street, corner of Bolton Street; at Norfolk Street, corner of Webster Avenue; at Earl Street, corner of South Street.

In Thorndike Street a new Holyoke hydrant has been set to take the place of the post broken while being used during a fire.

Old flush hydrants have been removed as follows: Banks Street, at Cowperthwaite; Bradbury Street; Brattle Street, corner Channing; Brattle Street, corner Lowell; Brattle Street, corner Willard; Chauncy Street, opposite Langdon; Fourth Street, corner Charles; Fourth Street, corner Winter; Harvard Street, corner Dana; Hilliard Street, corner Brattle; Magazine Street, at elbow; Mason Street, corner Garden; Pacific Street new (flush set); Raymond Street (Holyoke set); South Street, corner Dunster; Story Street, corner Brattle; Webster Avenue, corner Plymouth.

Post hydrants have been set, either in the old locations of flush removed, or in the vicinity. (See table of main pipes, etc).

An old Boston hydrant has been set, in place of Perkins removed, in Prison Point Street.

In Boylston Street, for the accommodation of the West End Street Railway Co. (when widening the street), the post hydrant was removed; it is to be reset upon the Company's application.

The hydrant at the corner of Concord Avenue and Follen Street has been relocated at the corner of Follen Street and Concord Avenue.

The old Boston hydrant on Concord Avenue, near Donnell Street, has been moved across the street.

Stony Brook.

The Stony Brook pipe line has, as usual, been examined and the locations of the blow-offs and gates marked.

A new gate box has been set and its grade lowered in River Street, Waltham, for the accommodation of the Newton Street Railway.

A new fence has been erected between the lands of the city and W. E. Roberts, in order to control the tresspassing.

It will be necessary during the coming year to point up the brick and stone work around the gate house at the dam.

Table Showing the Daily Average Number of Gallons, by the Month, Flowing over the Waste Way at Stony Brook.

		Number of Days.			Number of Days.
Dec., 1896	6,680,645	31	June, 1897	10,693,333	29
Jan., 1897	10,680,645	31	July, 1897	3,090,322	11
Feb., 1897	9,521,429	28	Aug., 1897	10,464,516	30
March, 1897	40,738,710	31	Sept., 1897	10,000	1
April, 1897	26,206,667	30	Oct., 1897	No overflow.	
May, 1897	12,348,387	31	Nov., 1897	723,333	3

Total quantity wasted . . . . 3,999,700,000 gallons.
Total number of days in which water wasted . . . . 256.

RECAPITULATION.

New Supplies.

	6 Inch	4 Inch	3 Inch	2 Inch	1½ Inch	1¼ Inch	1 Inch	¾ Inch	Total
Length, in feet, of pipe . . .	178	329	236½	506½	441½	1704½	4811½	7921	16121½
Number of supplies	5	7	2	11	9	24	97	219	374
Number of stop and waste valves				10	8	19	85	226	348
Number of screw cocks . . .				11	10	24	92	218	355
Number of sidewalk cocks .						21	94	220	335
Number of service boxes . .									333
Number of gate boxes, . . .									11
Number of wooden boxes . .									25

Main Pipe.

	20 Inch	12 Inch	10 Inch	8 Inch	6 Inch	4 Inch	2 Inch	1½ Inch	Total
Length, in feet, of iron pipe .	10	6865	3835½	5638	28884½	2177	119½	726	48255½
Length, in feet, of iron pipe, (renewals)	—	5707	3825	5638	20968½	849	—	—	36987½
Number of gates	1	5	10	11	105	20	—	—	152
Number of hydrants . . .	—	—	—	—	—	—	—	—	41

Comparative Trenching for the Past 8 Years.

	Extensions.	Renewals.	Supplies.	Total Feet.	Miles.
1890	11,713 1-2	1,929	15,525	29,167 1-2	5.52
1891	9,858 1-2	2,958	17,864	30,680 1-2	5.81
1892	16,784 1-2	13,628	16,013	46,425 1-2	8.79
1893	18,380 1-2	11,008 1-2	14,233 1-2	43,622 1-2	8.26
1894	13,673	17,481 1-2	17,211	48,365 1-2	9.16
1895	11,083	15,638 1-2	22,266	48,987 1-2	9.27
1896	17,421	26,243	17,361	61,025	11.55
1897	11,268	36,987 1-2	16,121 1-2	64,377	12.19

Conclusion.

Following will be found the Engineer's report.

All of which is respectfully submitted.

E. C. BROOKS,

Acting Superintendent.

REPORT OF PUMPING ENGINEER

PUMPING STATION, CAMBRIDGE WATER WORKS,
November 30, 1897.

To the Honorable Water Board of the City of Cambridge :—

Gentlemen:—The addition to the boiler house, which was under contract at the date of the last report, was finished early during the present year, and the two new ninety-inch Belpaire boilers have been put in place and started on regular work. The two remaining old boilers will need to be re-set and the fire-room floor paved as soon as circumstances will permit.

The new twenty million gallon Leavitt engine has been erected and was started October 27th, since which time it has been run at intervals to adjust the valves and working parts.

As soon as the floor of the engine room can be replaced and the ceilings covered and painted, the engine will be put to regular work and the city be supplied from the new reservoir.

The work of repairs and alterations to the old engines will be commenced at once.

The electric cable connecting the reservoir and Pumping Station is finished and telephone connected.

An electric device needed for showing the height of water in the reservoir should be put in as soon as possible.

The new electric plant for the Pumping Station is under contract to be delivered this month.

Following will be found a statement of the expenses at the Pumping Station and the usual table.

Respectfully submitted,

E. C. BROOKS,
Engineer.

Statement.

Coal	$7,830.53
Oil, waste, and packing	234.20
Salaries	6,728.79
Repairs on engines	17.00
Tools	18.19
Lighting	26.63
Ice	26.25
Telephone	57.00
Expressing	10.61
Moving track (coal shed)	20.50
Miscellaneous	60.88
	$15,030.58

Engine Record, Pond Levels and Rainfall.

DATE.	Low Service Engines.						High Service Engines.			Total Water Pumped.	Daily Average Water Pumped.	Total Coal Consumed.	Daily Average Coal Consumed.	Av. Height of Pond.	Rainfall.
	Engine No. 1.			Engine No. 2.											
	Running Time.		Water Pumped.	Running Time.		Water Pumped.	Running Time.		Water Pumped.						
	Hrs.	Min.	Gallons.	Hrs.	Min.	Gallons.	Hrs.	Min.	Gallons.	Gallons.	Gallons.	Lbs.	Lbs.	Feet.	Inches.
December, 1896	463	—	178,103,200	—	—	—	735	20	38,264,281	216,367,481	6,979,596	377,900	12,190	11.95	1.63
January, 1897	494	—	194,591,650	—	—	—	744	—	27,459,180	222,050,830	7,162,930	351,900	11,352	12.74	3.32
February, "	417	—	165,844,250	—	—	—	672	—	24,388,290	190,232,540	6,794,019	298,800	10,671	13.42	2.36
March, "	436	—	175,200,850	—	—	—	744	—	27,227,295	202,428,145	6,529,940	316,600	10,213	14.77	2.66
April, "	424	15	169,515,500	—	—	—	719	15	27,887,085	197,402,585	6,580,086	292,600	9,753	16.07	2.82
May, "	442	50	176,133,650	—	—	—	225	—	15,216,390	191,350,040	6,172,581	273,400	8,819	16.74	4.24
June, "	449	30	180,467,650	—	—	—	397	30	15,259,860	195,727,510	6,524,250	296,600	9,887	17.02	5.16
July, "	269	—	109,320,750	203	45	83,402,000	744	—	22,399,155	215,121,905	6,939,416	336,300	10,848	16.45	4.68
August, "	—	—	—	450	15	188,703,900	743	—	21,819,465	210,523,365	6,791,076	322,500	10,403	16.35	5.06
September, "	—	—	—	432	45	183,055,400	719	45	25,690,005	208,745,405	6,958,180	317,700	10,590	16.02	3.22
October, "	—	—	—	435	—	184,763,700	737	—	24,859,710	209,623,410	6,762,045	334,200	10,781	15.31	.55
November, "	—	—	—	397	30	159,548,950	720	—	22,218,030	181,766,980	6,058,899	351,500	11,717	15.09	6.83
Total . . .	3,395	35	1,349,177,500	1,919	15	799,473,950	7,900	50	292,688,746	2,441,340,196	—	3,870,000	—	—	42.53
Daily Average .	9	18	3,696,376	5	15	2,190,340	21	38	801,887	6,688,603	—	10,603	—	15.16	—

REPORT

OF THE

SCHOOL COMMITTEE FOR 1897

In compliance with Section 142 of the Regulations for the Public Schools, the Superintendent herewith submits his twenty-third annual report, it being for the year ending December 31, 1897.

Population of Cambridge.

1850	15,215	1875	47,838
1855	20,473	1880	52,699
1860	26,060	1885	59,658
1865	29,112	1890	70,028
1870	39,634	1895	81,643

School Census.

Number of children in the city on the first of May, five years old or more, but less than fifteen, as reported by the Truant Officers.

1880	9,390	1889	11,750
1881	9,582	1890	11,971
1882	10,370	1891	12,160
1883	10,490	1892	12,451
1884	10,682	1893	12,644
1885	10,957	1894	12,770
1886	11,131	1895	12,869
1887	11,216	1896	13,716
1888	11,727	1897	14,401

Schools and Classrooms.

Latin School	1	Classrooms in use	12
English High School	1	" "	13
Grammar Schools	8	" "	103
Primary Schools	19	" "	96
Grammar and Primary Schools	6	" "	66
Kindergartens	11	" "	16
Evening Drawing Schools	2	" "	5
Evening High School	1	" "	8
Evening Elementary Schools	4	" "	17
Whole number of Day Schools			46
Number of Classrooms for Day Schools			306

High School and Grammar School Houses.

Schoolhouses.	Number of Classrooms.	Estimated Value.	Size of Lots, Square Feet	Estimated Value.	Total Value.
Latin	8*	$40,000	37,828	$15,900	$55,900
Lee Street	6	10,000	10,100	5,000	15,000
English High	11†	220,000	74,366	18,000	238,000
Allston	12‡	30,000	15,193	4,600	34,600
Corlett	2§	3,000	10,000	1,000	4,000
Harvard	16‡	44,000	20,494	12,000	56,000
Morse	14‡	73,000	25,650	7,000	80,000
Peabody	6	27,000	21,813	8,000	35,000
Putnam	13‡	60,000	14,400	14,300	74,300
Russell	10‡	41,000	33,073	4,000	45,000
Shepard	11	30,000	14,755	7,000	37,000
Thorndike	12	30,000	10,027	4,000	34,000
Washington	12‡	25,000	14,951	10,000	35,000
Webster	16‡	50,000	25,839	9,000	59,000
Wellington	13‖	42,000	27,673	8,300	50,300
Total	162	$725,000	356,162	$128,100	$853,100

* Also a library, a physical laboratory, and an assembly hall.
† Also five recitation rooms, a library, a physical laboratory, a chemical laboratory, a lecture room, a drawing room, and an assembly hall.
‡ Also an assembly hall.
§ Now used as a kindergarten.
‖ On the same lot there is another schoolhouse containing four rooms used for primary classes.

Primary Schoolhouses.

Schoolhouses.	Number of Classrooms.	Estimated Value.	Size of Lots, Square Feet.	Estimated Value.	Total Value.
Agassiz	7*	$17,400	19,689	$6,600	24,000
Boardman	8	12,000	10,018	4,500	16,500
Cushing	2	3,000	14,787	1,500	4,500
Dana	4	2,000	14,317	4,300	6,300
Dunster	4	4,000	10,000	2,000	6,000
Felton	4	6,000	15,090	4,500	10,500
Gannett	5	12,000	15,434	3,000	15,000
Gore	12	25,000	9,900	4,000	29,000
Holmes	4‡	6,000	11,182	4,500	10,500
Lassell	4	8,000	10,000	2,500	10,500
Lowell	4	7,000	12,033	2,500	9,500
Otis	8	12,000	8,270	4,000	16,000
Parker	6	19,000	12,329	7,000	26,000
Quincy	2	10,000	8,469	5,000	15,000
Reed	4	4,000	12,000	1,200	5,200
Riverside	4	5,000	11,198	3,000	8,000
Sargent	4	3,000	9,995	4,000	7,000
Sleeper	8*	24,800	21,284	4,200	29,000
Stearns	4	3,000	10,050	5,000	8,000
Tarbell	4	8,000	19,500	4,000	12,000
Taylor	10*†	38,000	23,592	7,000	45,000
Willard	12	25,000	20,079	5,000	30,000
Wyman	6	6,000	14,347	3,500	9,500
Primary, Total	130	$260,200	313,563	$92,800	$353,000
Grammar, "	137	455,000	233,868	89,200	544,200
High Schools "	25	270,000	122,294	38,900	308,900
Summary	292	$985,200	669,725	$220,900	$1,206,100

*Used for lower grammar grades and the primary grades.
†Also an assembly hall. ‡Now used as a manual training school.

Number of teachers in the Day Schools.

[Special teachers are included in the total.]

December.	Latin School.	English High School.	Grammar Schools.	Primary Schools.	Kinder-gartens.	Total.	Normal Graduates.
1892	10	19	131	106	12	284	166
1893	11	19	138	108	13	297	171
1894	12	21	142	114	15	312	191
1895	14	21	146	116	16	322	198
1896	15	21	151	124	17	337	207
1897	16	23	157	127	22	354	219

Attendance at all the Day Schools.

Year.	Number of Pupils Registered.	Average Number Belonging.	Average Daily Attendance.	Per cent of Attendance.
1892	12,845	10,861	9,959	91.7
1893	13,107	11,045	10,074	91.2
1894	13,254	11,166	10,322	92.4
1895	13,571	11,505	10,611	92.2
1896	13,992	11,957	11,068	92.6
1897	14,373	12,317	11,397	92.5

Attendance at the Latin School.

Year.	Number of Pupils Registered.	Average Number Belonging.	Average Daily Attendance.	Per cent of Attendance.
1892	238	213	203	95.4
1893	269	251	236	94.1
1894	319	303	286	94.3
1895	380	354	334	94.3
1896	411	373	351	94.2
1897	387	358	339	94.5

Attendance at the English High School.

Year.	Number of Pupils Registered.	Average Number Belonging.	Average Daily Attendance.	Per cent of Attendance.
1892	624	529	511	96.5
1893	681	569	549	96.5
1894	691	611	594	97.1
1895	743	648	626	96.7
1896	733	632	611	96.6
1897	714	644	622	96.7

Attendance at the Grammar Schools.

Year.	Number of Pupils Registered.	Average Number Belonging.	Average Daily Attendance.	Per cent of Attendance.
1892	5,891	5,175	4,803	92.8
1893	5,981	5,206	4,838	92.9
1894	5,934	5,200	4,876	93.8
1895	5,926	5,204	4,888	93.9
1896	6,069	5,439	5,105	93.9
1897	6,318	5,682	5,351	94.2

Attendance at the Primary Schools.

Year.	Number of Pupils Registered.	Average Number Belonging.	Average Daily Attendance.	Per cent of Attendance.
1892	5,697	4,650	4,203	90.4
1893	5,757	4,666	4,215	90.3
1894	5,815	4,741	4,317	91.1
1895	5,928	4,925	4,499	91.3
1896	6,138	5,117	4,680	91.4
1897	6,308	5,192	4,741	91.3

Attendance at the Kindergarten.

Year.	Number of Pupils Registered.	Average Number Belonging.	Average Daily Attendance.	Per cent of Attendance.
1894	495	311	249	80.3
1895	594	374	264	70.6
1896	641	396	321	81.2
1897	646	441	344	78.1

Number of pupils admitted to the lowest grade of the Latin School.

Course, 5 years.

Year.	Boys.	Average Age.	Girls.	Average Age.
1891	32	14 years 5 months	35	14 years 3 months
1892	52	14 years 7 months	32	14 years 7 months
1893	63	14 years 6 months	41	14 years 1 month
1894	51	14 years 8 months	44	14 years 4 months
1895	54	14 years 6 months	48	14 years 5 months
1896	47	14 years 4 months	54	14 years 6 months
1897	61	14 years 7 months	52	14 years 7 months

Number of pupils graduated from the Latin School.

Course, 5 years.

Year.	Boys.	Average Age.	Girls.	Average Age.
1891	22	18 years 4 months	14	18 years 4 months
1892	8	17 years 8 months	14	18 years 7 months
1893	16	19 years 3 months	7	19 years 5 months
1894	15	18 years 11 months	12	19 years 6 months
1895	16	18 years 9 months	9	18 years 11 months
1896	16	18 years 0 months	18	18 years 6 months
1897	21	19 years 1 month	14	18 years 6 months

Number of pupils admitted to the lowest grade of the English High School and the Manual Training School.

[The Manual Training School is connected with the English High School.]

Year.	English High. Course, 4 yrs.	Average Age.	Manual Training. Course, 4 yrs.*	Average Age.
1891	196	15 years 1 month	56	15 years 5 months
1892	230	15 years 3 months	85	15 years 3 months
1893	210	15 years 3 months	73	15 years 1 month
1894	239	15 years 1 month	72	15 years 2 months
1895	195	14 years 11 months	63	15 years 2 months
1896	192	14 years 11 months	59	15 years 6 months
1897	207	14 years 11 months	84	15 years 4 months

Number of pupils graduated from the English High School and the Manual Training School.

[The Manual Training School is connected with the English High School.]

Year.	English High. Course, 4 yrs.	Average Age.	Manual Training. Course, 4 yrs.*	Average Age.
1891	35	18 years 4 months	13	17 years 4 months
1892	52	18 years 9 months	25	18 years ¼ month
1893	63	18 years 10 months	32	18 years ¾ month
1894	65	18 years 7 months	26	17 years 10 months
1895	54	18 years 6 months	35	17 years 8 months
1896	62	18 years 6 months	10	18 years 6 months
1897	70	18 years 7 months	20	18 years 6 months

Number of pupils admitted to the lowest class in the Latin School and the English High School since 1887, with the number of graduates.

Admitted to Latin School.	Graduated from Latin School.	Admitted to English High.	Graduated from English High.	Admitted to Manual Training Course.	Graduated from Manual Training Course.
944	280	2,123	581	647	161

* Course changed to four years in 1893.

Number of pupils graduated from the Grammar and Primary Schools.

Year.	Grammar Schools. Course, 6 yrs.	Average Age.	Primary Schools. Course, 3 yrs.	Average Age.
1892	536	15 years 1 month	1,149	9 years 10 months
1893	487	14 years 11 months	1,147	9 years 9 months
1894	563	14 years 11 months	1,159	9 years 8 months
1895	491	14 years 9 months	1,209	9 years 10 months
1896	467	14 years 10 months	1,273	9 years 9 months
1897	521	14 years 11 months	1,292	9 years 9 months

Length of time in completing the Course of Study in the Grammar Schools.

Year.	In 4 years.	In 5 years.	In 6 years.	In 7 years or more.
1892	10 per cent	27 per cent	45 per cent	18 per cent
1893	9 per cent	29 per cent	47 per cent	15 per cent
1894	10 per cent	32 per cent	42 per cent	16 per cent
1895	9 per cent	30 per cent	46 per eent	15 per cent
1896	8 per cent	33 per cent	49 per cent	10 per cent
1897	6 per cent	30 per cent	51 per cent	13 per cent

Length of time in completing the Course of Study in the Primary Schools.

Year	In 2 years.	In 2½ years.	In 3 years.	In 3½ years.	In 4 years.	In 4½ years or more.
1893	6 per cent	3 per cent	56 per cent	3 per cent	20 per cent	12 per cent
1894	8 per cent	2 per cent	58 per cent	2 per cent	21 per cent	9 per cent
1895	5 per cent	1 per cent	56 per cent	5 per cent	23 per cent	10 per cent
1896	7 per cent	2 per ceut	60 per cent	3 per cent	21 per cent	7 per cent
1897	2 per cent	3 per cent	63 per cent	4 per cent	21 per cent	7 per cent

Number of pupils in all the Day Schools at different periods of the year.

Year.	First Day of the First Week.	First Day of the Second Week.	First Week of October.	First Week of the next June.
1892	10,184	10,974	11,360	11,342
1893	10,692	11,354	11,628	11,532
1894	10,889	11,562	11,847	11,723
1895	11,178	11,894	12,146	12,002
1896	11,580	12,314	12,697	12,569
1897	12,303	13,085	13,281	

Number of pupils in the Latin School, December, 1897.

Grade.	Boys.	Girls.	Total.	Per cent.
Fourteenth	23	28	51	.137
Thirteenth	25	35	60	.161
Twelfth	37	32	69	.185
Eleventh	39	37	76	.204
Tenth	61	56	117	.313
Total	185	188	373	

Number of pupils in the English High School and in the Manual Training School, December, 1897.

Grade.	Boys.	Girls.	Total.	Per cent.
Thirteenth	45 (17)*	77	122	.167
Twelfth	53 (23)*	63	116	.159
Eleventh	90 (41)*	96	186	.255
Tenth	157 (97)*	149	306	.419
Total	345 (178)*	385	730	

* Manual Training School.

Number of pupils in the Grammar Schools, December, 1897.

Grade.	Boys.	Girls.	Total.	Per cent.
Ninth	243	281	524	.086
D	20	29	49	.008
Eighth	340	345	685	.113
C	67	63	130	.022
Seventh	388	442	830	.136
Sixth	526	494	1,020	.168
B	93	85	178	.029
Fifth	560	573	1,133	.186
A	174	189	363	.060
Fourth	594	575	1,169	.192
Total	3,005	3,076	6,081	

Number of pupils in the Primary Schools, December, 1897.

Grade.	Boys.	Girls.	Total.	Per cent.
Third	762	737	1,499	.271
Second	824	857	1,681	.303
First	1,195	1,168	2,363	.426
Total	2,781	2,762	5,543	

Number of pupils and teachers in the Kindergartens, 1895, 1896, 1897.

Year.	Boys.	Girls.	Total.	Number of Teachers.
1895	192	225	417	16
1896	231	270	501	17
1897	254	329	583	22

Number of pupils belonging to the Evening Drawing Schools, with the average attendance.

1892.	1893.	1894.	1895.	1896.	1897.
219	242	217	212	193	209
127	142	103	117	103	114

Number of pupils belonging to the Evening Schools, with the average attendance.

1892.	1893.	1894.	1895.	1896.	1897.
1,013	1,085	1,379	1,246	1,128	1,225
329	419	542	478	445	448

Number of pupils in the Private Schools in Cambridge, including those in the Parochial Schools.

1892.	1893.	1894.	1895.	1896.	1897.
2,235	2,376	2,492	2,557	2,518	2,512

Cost of instruction in the Evening Schools.

Year.	Elementary.	High.	Drawing.	Total.
1892	$1,827 50	$1,226 25	$1,157 00	$4,210 75
1893	2,124 50	1,363 00	1,531 00	5,018 50
1894	2,293 00	1,396 00	1,175 00	4,864 00
1895	2,427 00	1,422 50	1,255 00	5,104 50
1896	2,104 00	1,321 50	1,110 00	4,535 50
1897	2,086 00	1,274 50	1,060 00	4,420 50

Cost of instruction in the Day Schools.

[Salaries of teachers, superintendent, agent, clerks, and truant officers.]

Year.	Number of Teachers December 1.	Average Number of Pupils.	Whole cost.	Cost per Pupil.
1876	176	7,066	$164,818 00	$23 32
1878	173	7,028	136,491 20	19 42
1880	182	7,175	130,371 75	18 17
1882	200	7,898	137,328 55	17 38
1884	216	8,414	152,290 62	18 09
1886	233	9,218	165,277 42	17 92
1888	241	9,756	175,773 80	18 02
1890	263	10,089	190,558 21	18 89
1891	272	10,520	196,938 70	18 72
1892	284	10,861	207,144 22	19 07
1893	297	11,045	215,593 12	19 52
1894	312	11,166	228,873 48	20 50
1895	322	11,505	235,811 62	20 50
1896	337	11,957	245,104 01	20 50
1897	354	12,317	255,397 92	20 73

Cost of the Day Schools.

[The expenditures for new schoolhouses are not included.]

Year.	Number of Teachers December 1.	Average Number of Pupils.	Whole Cost.	Cost per Pupil.
1876	176	7,066	$200,894 09	$28 43
1878	173	7,028	162,437 77	23 11
1880	182	7,175	153,967 56	21 45
1882	200	7,898	166,230 52	21 04
1884	216	8,414	203,234 56	24 15
1886	233	9,218	207,536 46	22 51
1888	241	9,756	225,408 57	23 10
1890	263	10,089	241,980 84	23 98
1891	272	10,520	249,491 67	23 71
1892	284	10,861	266,651 02	24 55
1893	297	11,045	274,053 82	24 81
1894	312	11,166	287,137 37	25 72
1895	322	11,505	299,085 93	26 00
1896	337	11,957	316,090 83	26 44
1897	354	12,317	327,319 90	26 57

Summary of the School Census as taken by the Truant Officers, May, 1897.

[The statutes make it the duty of the School Committee to ascertain annually the names and ages of all persons between the ages of five and fifteen years, belonging in their respective towns and cities on the first day of May.]

Number of children in the city between five and fifteen	14,401
Number in public schools between five and fifteen	11,324
Number in public schools fifteen years old or more	1,397
Number in private schools between five and fifteen	2,049
Number not attending school between five and eight	748
Number not attending school between eight and fourteen	117
Number not attending school between fourteen and fifteen	161
Whole number not attending school between five and fifteen	1,026
Number in the city between five and six	1,408
Number in the city between eight and fourteen	8,587

Finances.

[For the financial year ending December 1, 1897.]

Cost of instruction in day schools	$255,397 92
Cost of instruction in evening schools	4.420 50
Cost of care and repairs of schoolhouses, day schools	49,359 95
Cost of care and repairs of schoolhouses, evening schools	2,400 00
Cost of text-books and supplies	17,648 36
Expended for incidental expenses	1,247 55
Expended for transportation of pupils	450 00
Expended for care of truants	2,663 14
Expended for flags	572 98
Expended for new Latin schoolhouse	100,018 62
Expended for Russell schoolhouse	15,792 08
Expended for furniture for Russell schoolhouse	2,934 39
Expended for land for Taylor school yard	3,500 00
Expended for finishing Taylor schoolhouse	2,407 60
Expended for land for new schoolhouse in Ward 5	6,200 00
Expended for Sleeper schoolhouse (damage by fire)	1,913 20
Expended for furniture for different buildings	1,396 95
Expended for improvements in sanitary arrangements	3,025 55
Total expenditures for all school purposes	$471,328 79
Deducting from the above the amount received from the Hopkins Fund, $702.52, the tuition of State Wards, $161.00, and for the tuition of non-resident pupils, $1,599.50, less a rebate of $21.00, the actual cost of the schools to the city is	$468,886 77
Assessed value of real and personal estates, May, 1897	$86,641,745 00
Ratio of expenditures for school purposes to the valuation in 1897	.0054

Statistics taken from the sixty-first annual report of the Secretary of the State Board of Education.

Number of cities and towns: cities, 32; towns, 321; . . .	353
Number of public schools	9,557
Number of pupils of all ages in the public schools during the year	439,367
Number of persons over fifteen years of age attending the public schools	41,886
Per cent of attendance based upon the average membership	92
Number of persons employed as teachers in the public schools during the year: men, 1,120; women, 11,723;	12,843
Number of teachers who have graduated from normal schools	4,103
Average number of months the public schools have been kept for the entire year	$9\frac{6}{20}$
Number of high schools	262
Number of teachers in high schools	1,283
Number of pupils in high schools	36,228
Amount expended upon the public schools, exclusive of the expense of school buildings	$9,132,291 97
Cost of new schoolhouses, permanent improvements, and ordinary repairs	3,258,345 95
Entire expenditure for public school purposes . . .	$12,390,637 92

Special Institutions.

The following are the statistics of the attendance and expenses of the Massachusetts pupils in the several schools for the deaf, the blind, and the feeble-minded.

AMERICAN SCHOOL, HARTFORD, CONN.

Number of Massachusetts beneficiaries, 1896–97	66
Paid for these pupils	$13,525 26

CLARK SCHOOL, NORTHAMPTON.

Number of Massachusetts beneficiaries, 1896–97	126
Paid for these pupils	$25,171 28

HORACE MANN SCHOOL, BOSTON.

Number of Massachusetts beneficiaries, 1896–97	122
Paid for these pupils	$13,363 93

PERKINS INSTITUTION FOR THE BLIND.

Number of Massachusetts beneficiaries, 1896–1897	147
Annual appropriation from the State	$30,000 00

SCHOOL FOR THE FEEBLE-MINDED, WALTHAM.

Number of Massachusetts beneficiaries, 1896–1897	180
Annual appropriation from the State	$25,000 00

TABULAR VIEW.

December 1, 1897.

Prepared by the Secretary of the School Committee.

Names of Schools.	Teachers.	Salaries.	No. of Pupils Dec. 1, 1897.
Latin	William F. Bradbury	$3,000	373
	Theodore P. Adams	2,000	
	John I. Phinney	1,500	
	Max Benshimol	950	
	Margarette M. Leighton.	1,300	
	Helen M. Albee	950	
	Constance Alexander	800	
	Mary A. Bachelder	750	
	Alice Cary Baldwin	800	
	Caroline Drew	950	
	Mary C. Hardy	950	
	Rose Hardwick	800	
	Mabel E. Harris	700	
	Helen W. Munroe	700	
	Lena G. Perrigo	700	
	Jennie S. Spring	950	
	Annie S. Dodge*	500	
English High	Ray Greene Huling	3,000	730
	Edwin L. Sargent†	2,000	
	Charles F. Warner	2,000	
	Joseph A. Coolidge	1,400	
	Russell T. Greene, Jr.	800	
	Grace L. Deering	1,050	
	Clara A. Armes	950	
	Mabel L. Chamberlain	850	
	Caroline Close	950	
	Bertha L. Cogswell	900	
	Gertrude H. Crook	750	
	Esther S. Dodge	700	
	Myra I. Ellis	1,000	
	Maud A. Lawson	950	
	Henrietta E. McIntire	900	
	Mary Moulton	950	
	Louisa P. Parker	1,000	
	Lillian C. Rogers	950	
	Caroline A. Sawyer†	950	
	Emma A. Scudder	950	
	Florence W. Smith	750	
	Martha R. Smith	950	
	Maria E. Spare	950	
	Delia M. Stickney	1,050	
	Alice H. Stratton	700	
	Martha L. Babbitt*	600	

* Secretary and Librarian.

† On leave of absence for study or travel in accordance with the rules of the School Committee.

Tabular View — Continued.

Names of Schools.	Teachers.	Salaries.	No. of Pupils Dec. 1, 1897.
Agassiz { Grammar	Maria L. Baldwin	$900	{ 142
{ Primary			{ 213
	Sarah E. Barrett	620	
	Addie B. Byam	470	
	Mary G. Carpenter	620	
	Mary P. Massé	620	
	Mary A. Parsons	620	
	Grace C. Stedman	470	
	Jennie L. Upham	620	
Allston	Benjamin W. Roberts	2,000	596
	Sara A. Bailey	700	
	Emily R. Pitkin	650	
	Susan M. Adams	620	
	Mary Blair	620	
	Mary M. Brigham	620	
	Evelyn M. Dormer	470	
	S. Alice Fell	620	
	Susan L. Keniston	620	
	Evelyn B. Kenney	620	
	Ada M. Litchfield	620	
	Nina M. Marsh	620	
	S. Agnes Mulloney	620	
	Ida G. Smith	620	
	Caroline M. Williams	620	
Harvard	James S. Barrell	2,000	777
	Arthur B. Webber	1,000	
	Ada H. Wellington	700	
	Margaret B. Wellington	700	
	Anna M. Brown	650	
	Addie L. Bartlett	620	
	Elizabeth L. Buckley	620	
	Mary F. Emerson	620	
	Frances Fabyan	620	
	Margaret M. Fearns	400	
	Estella J. French	620	
	Eliza S. Getchell	620	
	Catherine A. McLean	400	
	Adeline M. Murphy	620	
	Elizabeth M. Nash	620	
	Louise C. Patterson	620	
	Annie M. Street	620	
	Emma F. West	620	
	Hortense O. Young	620	
Morse { Grammar	Mary A. Townsend	2,000	{ 429
{ Primary			{ 221
	Mary E. Towle	700	
	Marcia E. Ridlon	650	
	Elizabeth J. Baldwin	620	
	Stella L. Cotton	620	
	Marie B. Daniel	620	
	Annie M. Dow	620	
	Leila F. Drake	620	

Tabular View — Continued.

Names of Schools.	Teachers.	Salaries.	No. of Pupils Dec. 1, 1897.
Morse	Ida J. Holmes	$620	
	Mary E. Leavitt	620	
	Grace H. Manter	470	
	Alice E. May	620	
	Emilie F. Richardson	620	
	Mary E. Sawyer	620	
	Lucy M. Soulée	620	
	Gertrude D. Sprague	620	
Peabody	Frederick S. Cutter	2,000	306
	Addie F. Cleary	700	
	Anna F. Bellows	620	
	Charlotte A. Ewell	620	
	Florence E. Frost	620	
	Effie A. Perkins	400	
	Marion Prescott	400	
	Alice M. Tufts	520	
Putnam	Thomas W. Davis	2,000	574
	Frederick B. Thompson	1,200	
	Eliza M. Hussey	700	
	HenrietteE.deRochemont	650	
	Mary A. Carmichael	620	
	Anna L. P. Collins	620	
	Sarah M. Grieves	620	
	Hattie L. Jewell	620	
	Annie B. Josselyn	620	
	Louise A. Keeler	620	
	Marcia L. Marple	400	
	Mabel S. Murray	620	
	Eliza S. Paddack	620	
	Louise A. Stickney	620	
	Annie A. Trelegan	620	
Russell	Arthur C. Wadsworth	1,500	268
	Alice G. Teele	700	78
	Carrie J. Allison	470	
	Fannie P. Browning	620	
	Mary A. Connelly	400	
	Alice V. Currier	570	
	Edna W. Hodgkins	520	
	H. Maúd McLean	520	
	Gertrude E. Russell	400	
	Loretta L. Shaw	520	
Shepard	Edward O. Grover	2,000	496
	Nellie A. Hutchins	700	
	Caroline L. Blake	700	
	Ella M. Horne	650	
	Emma A. Faulkner	620	
	Harriet Foster	620	
	Lottie L. Griswold	620	
	Louise H. Griswold	620	
	Ellen J. Hunt	620	
	Flora C. Ingraham	620	

Tabular View — Continued.

Names of Schools.	Teachers.	Salaries.	No. of Pupils Dec. 1, 1897.
Shepard	Mary Agnes Stanton	$620	
	Grace D. Street	570	
	Carrie M. Wilson	570	
Sleeper { Grammar	A. Estelle Ingraham	900	255
Sleeper { Primary	Emily Bissell	520	129
	Mabel E. Blake	620	
	Mary F. Calnane	570	
	Florence M. Dudley	470	
	Fannie G. Flanders	620	
	Laura C. Harding	620	
	Melissa M. Lloyd	620	
	Evelyn J. Locke	620	
	Blanche C. Trefethen	520	
Taylor { Grammar	Ella R. Avery	900	78
Taylor { Primary	Mary A. Boland	400	288
	Bridget T. Boyle	620	
	Anna E. Callahan	620	
	Lillian M. Canty	620	
	Josephine Day	400	
	Margaret E. Fuller	470	
	Kate A. Hegarty	570	
	Cecilia F. Leahy	470	
	Mabel F. Reycroft	570	
Thorndike	Ruel H. Fletcher	2,000	479
	Harriet A. Townsend	700	
	Laura A. Westcott	650	
	Grace W. Fletcher	620	
	Lena S. Frederikson	470	
	Emma A. Hopkins	620	
	Elizabeth G. Hutchison	620	
	Mary E. Ingraham	570	
	Grace L. Morton	570	
	Mary E. Nason	620	
	S. Louise Regal	620	
	Abby S. Taylor	620	
	Lydia A. Whitcher	620	
Washington	John W. Freese	2,000	407
	Leila H. Sprague	700	
	Mary E. Stiles	700	
	Alice P. Fay	650	
	Eldora J. Clark	620	
	Mattie S. Cutting	400	
	Mary L. Ells	620	
	Ellen A. Kidder	620	
	Winifred L. Kinsley	620	
	Emma Penney	620	
	Margaret J. Penney	620	
	Hattie Shepherd	620	
	Marianne M. Webb	620	
Webster	John D. Billings	2,000	726

Tabular View — Continued.

Names of Schools.	Teachers.	Salaries.	No. of Pupils Dec. 1, 1897.
Webster	William D. Tillson	$1,000	
	Alice C. Phinney	700	
	Martha N. Hanson	700	
	Ada A. Billings	650	
	Mabel T. Ashley	620	
	Ella E. Buttrick	620	
	Charlotte M. Chase	620	
	Amy N. Cottle	620	
	Susan I. Downs	620	
	Josephine Hills	620	
	Katherine E. Lahey	620	
	M. Josephine Lamprey	620	
	Anna S. Lamson	620	
	Minnie V. Reid	620	
	Harriette E. Shepard	620	
	Ardelle M. Tozier	570	
	Ellen F. Watson	620	
Boardman	Florence H. Barrett	690	323
	Christine R. Denyven	620	
	Isabella M. Duguid	620	
	Myra Hatt	520	
	Elizabeth J. Karcher	620	
	Grace Morgan	570	
	C. Florence Smith	620	
	Sarah E. Stewart	620	
Cushing	Isadore I. Foster	630	90
	Eva J. Irish	470	
Dana	Georgia E. Martin	640	164
	Jane Macmaster	570	
	Matilda Macmaster	620	
	Marion B. Magwire	620	
Dunster	Susan E. Wyeth	645	143
	Mary E. Colby	620	
	Mary A. Doran	620	
	Agnes M. Sheridan	570	
Felton	Florence A. Rogers	640	188
	S. Emma Davis	620	
	Helen E. Hazard	620	
	Carrie H. Smith	620	
Gannett	Mary A. Rady	645	208
	Annie M. Billings	620	
	Anna M. Jones	620	
	Mary McFarlane	400	
	Augusta G. Mirick	620	
Gore	Frances E. Pendexter	680	478
	Maude A. Deehan	650	
	Charlotte A. Callahan	470	
	Minnie A. Doran	520	
	Mary A. Hurley	400	
	Katherine L. McElroy	620	
	Julia G. McHugh	570	
	Mary E. Mulloney	620	

Tabular View — Continued.

Names of Schools.	Teachers.	Salaries.	No. of Pupils Dec. 1, 1897.
Gore	Maude L. Parker	$470	
	Anastasia Peters	620	
	Jane E. Whoriskey	620	
Lassell	Frances E. Whoriskey	640	176
	Rose V. Collier	620	
	Elizabeth B. Gahm	620	
	Mary E. Whoriskey	520	
Lowell	Eusebia A. Minard	640	102
	Malvina M. Joslin	620	
	Agnes J. McElroy	620	
Otis	Ellen N. Leighton	685	315
	Frances Allen	620	
	Josephine M. Doherty	620	
	Luella M. Marsh	620	
	Emma J. Ross	620	
	Margaret Sullivan	620	
	Ellen C. Walsh	620	
	Kate F. Wellington	620	
Parker	Mary A. Knowles	650	244
	Charlotte E. Clapp	620	
	Margaret E. Fitzgerald	570	
	Harriet R. Harrington	520	
	Agnes Marchant	570	
Quincy	Charlotte E. Jewell	630	109
	Lucy C. Wyeth	620	
Reed	Margaret T. Burke	640	183
	Margaret M. Brosnahan	400	
	Jennie R. Marsh	570	
	Julia A. Robinson	620	
Riverside	Elizabeth A. Tower	640	126
	Amanda M. Alger	620	
	Mary A. Burke	620	
Sargent	Mary A. Brown	640	238
	Christina D. Barbey	620	
	Lucy M. Fletcher	570	
	Elmira F. Hall	620	
	Ella M. Leaver	620	
Stearns	Fannie E. Higgins	640	210
	Maria J. Bacon	620	
	Ellen A. Cheney	620	
	Eva A. Taylor	620	
	Hattie A. Thayer	400	
Tarbell	Emma J. Young	640	213
	Florence J. Alley	620	
	Sadie E. Meacham	620	
	Helen Montague	400	
	Carrie P. Pierce	620	
Willard	Amelia Wright	710	470
	Sally N. Chamberlain	620	
	M. Elizabeth Evans	620	
	Ella F. Gulliver	620	
	Julia S. Gushee	620	

Tabular View — Concluded.

Names of Schools.		Teachers.	Salaries.	No. of Pupils Dec. 1, 1897.
Willard		Mary E. G. Harrington.	$620	
		Louise W. Harris	620	
		Katherine M. Lowell	620	
		Belle M. Menard	570	
		Eliza D. Watson	620	
		Grace R. Woodward	620	
		Laura Wright	620	
Wyman		Fannie E. M. Dennis	650	296
		Addie M. Bettinson	620	
		Mary H. Brooks	400	
		M. Carrie Dickman	620	
		Georgianna P. Dutcher	620	
		Genevieve S. Flint	620	
		Mary M. Gilman	620	
Wellington	Grammar	Herbert H. Bates	2,500	548
	Primary			338
		Sarah J. Gunnison	800	
		Margaret Kidd	800	
		Mary I. Vinton	800	
		Carrie H. Stevens	700	
		Emma M. Taylor	620	
		Training Class	4,500	
Kindergartens	Boardman	Mary B. Pratt	520	57
		Caroline F. Carrick	440	
	Corlett	Sarah S. Wells	570	44
		Annie M. Dodd	400	
	Dunster	Clara A. Hall	620	40
		Caroline A. Wolcott	440	
	Gannett	Gertrude M. Gove	620	52
		Carrie E. Shepherd	400	
	Gore	Selma E. Berthold	620	55
		Jennie S. Clough	400	
	Lowell	Melinda Gates	620	43
		Margaret L. Voorhees	400	
	Moore Street	Harriette E. Ryan	620	54
		Leonice S. Morse	400	
	Riverside	Helen I. Hutchison	620	59
		Edith L. Lesley	400	
	Sleeper	Mabel F. Adams	570	57
		Margaret I. Stebbins	440	
	Taylor	Mary F. Leland	620	60
		Caroline A. Leighton	440	
	Willard	Ellen A. Watson	570	62
		Alice V. McIntire	400	
*Holmes		John D. Billings	350	

* Manual Training.

Teacher of Botany — Sarah E. Brassill	$700
Teacher of Gymnastics — Catherine F. Pedrick	600
Teachers of Sewing — Agnes Gordon	600
Alice H. Nay	600
Nancy T. Dawe	360
Director of Music — Frederick E. Chapman	2,000
Director of Drawing — Peter Roos	1,800
Assistant in Drawing — Lucia N. Jennison	800
Special Primary Teacher — Mary A. Lewis	1,100
Superintendent — Francis Cogswell	3,000
Agent — Sanford B. Hubbard	2,000
Clerks — Althea B. Frost	700
Myrta E. Smith	500
Porter — John H. Lemon	500
Truant Officers — Lucian S. Cabot	800
John Carmichael	900
Francis M. Mason	900
William H. Porter	900

The Post Office addresses of the several schools are as follows:

Cambridge — English High, *Corlett, †Peabody, †Washington, ‡Agassiz, Cushing, Dunster, §Holmes, Lowell, Quincy, Riverside, ‡Russell.

Cambridgeport — Latin, †Allston, †Harvard, ‡Morse, †Webster, ‡Wellington, Boardman, Dana, Felton, Gannett, Parker, Sargent, Stearns, Tarbell, Willard.

East Cambridge — †Putnam, †Thorndike, Gore, Lassell, Otis, ‡Taylor.

North Cambridge — †Shepard, Reed, ‡Sleeper, Wyman.

Summary.

Number of pupils in Latin School	373
Number of pupils in English High School	730
Number of pupils in Grammar Schools	6,081
Number of pupils in Primary Schools	5,543
Number of pupils in Kindergartens	583
Total	13,310
Number of pupils belonging to the Public Schools, Dec. 1, 1896	12,888
Increase of pupils, 1897	422
Increase of pupils, 1896	714
Increase of pupils, 1895	250

* Kindergarten.
† Grammar grades.
‡ Grammar and primary grades.
§ Manual Training.

Increase of pupils, 1894	278
Increase of pupils, 1893	135
Increase of pupils, 1892	210
Increase of pupils, 1891	222
Average annual increase of pupils, from 1880 to 1890 (inclusive)	331

Cost of Instruction.

Latin School	$17,335 00	For each pupil	$46 47
English High School	25,194 09	" " "	34 51
Training School	11,897 00	" " "	13 43
Grammar Schools	100,333 10	" " "	18 13
Primary Schools	72,050 45	" " "	13 84
Kindergartens	9,870 28	" " "	16 93
Teachers of Sewing	1,572 00		
Director of Music	2,000 00		
Directors of Drawing	2,530 00		
Teacher of Botany	595 00		
Teacher of Gymnastics	600 00		
Substitute Teachers	760 00		
Superintendent	3,000 00		
Agent	2,000 00		
Clerks	680 00		
Special Teacher in Primary Schools	1,030 00		
Truant Officers	3,430 00		
Porter	500 00		
Rebate of Tuition	21 00		
	$255,397 92	For each pupil	$19 19

Cost of instruction in Evening High School	$1,274 50
Cost of instruction in Evening Elementary Schools	2,086 00
Cost of instruction in Evening Drawing Schools	*1,060 00
	$4,420 50

*The director of drawing is principal of these schools. No part of his salary is included in this amount.

Remarks on the Statistics.

The increase over the last school year in the number of pupils registered is 381; in the average number belonging, 360; in the average daily attendance, 329. In the per cent of attendance there has been a decrease of .1 per cent. The number belonging to the schools in December, 1896, was 12,888; in December, 1897, 13,310; an increase of 422. The entire cost of the day schools, excluding the expenditures for new schoolhouses and new furniture, exceeds that of last year by $11,229.07, and the cost per pupil by 13 cents. In the entire cost of instruction the increase is $10,293.91, an increase in the cost per pupil of 23 cents.

While Cambridge expends a large amount for her schools, there are *two hundred and sixty-two* towns and cities in the State which make a larger expenditure in proportion to their wealth. In a list of the thirty-two cities, arranged numerically according to the percentage of their taxable property appropriated to the support of public schools for the year 1896–97, Cambridge is the *twenty-third;* and compared with the fifty-four towns and cities of our county, Cambridge is the *forty-fourth.* In a list of the towns and cities of the State, arranged numerically according to the sum appropriated for each child between five and fifteen years of age, Cambridge is the *fifty-seventh.*

These statistics relating to the schools of the State are taken from the sixty-first annual report of the secretary of the Board of Education.

Text-Books and Supplies.

At the meeting of the Board in December, the committee on supplies submitted a detailed report of the expenditures of that committee for the year. The report is as follows: —

In accordance with Section 29 of the Rules of the School Board, the Committee on Supplies submit their report for the school year ending July 1, 1897, it being their thirteenth annual report.

Stock on hand July 1, 1896	$3,339 70	
Purchases and expenditures from the appropriation	14,786 64	
Purchases and expenditures by exchanges	311 90	
		$18,438 24
Delivered to schools, officers, etc.	$14,557 46	
Sold and exchanged from stock	195 46	
Stock on hand July 1, 1897	3,685 32	
		$18,438 24

The purchases and expenditures have been:—

For text-books	$7,044 47	
Desk and reference books	192 37	
Copy and drawing books	739 51	
Apparatus and furnishings	1,241 12	
Printing, $237.14; expressage and labor, $250;	487 14	
Repairing books, $289.04; diplomas, $168.50;	457 54	
Miscellaneous supplies, etc.	4,936 39	
		$15,098 54
Less the value of exchanges		311 90
		$14,786 64

The net cost of text-books and supplies is as follows:—

Stock on hand July 1, 1896	$3,339 70	
Bills paid by the City Treasurer	14,786 64	
		$18,126 34
Less stock on hand July 1, 1897	$3,685 32	
Cash paid to City Treasurer, sales and damages	341 99	
		$4,027 31
We have, net cost of all schools and officers		$14,099 03

or an average cost per pupil of $1.094. The average cost per pupil per annum for thirteen years has been $1.223.

The annual cost per pupil for text-books and supplies since the introduction of the free text-book law is as follows: —

Year.	Average Cost per Pupil.	Year.	Average Cost per Pupil.	Year.	Average Cost per Pupil.
1885	$1.88	1889	$0.96	1893	$1.109
1886	1.17	1890	1.334	1894	1.243
1887	1.051	1891	1.248	1895	1.152
1888	1.068	1892	1.149	1896	1.436

The cost of each grade of schools for text-books and supplies is as follows: —

	Net Expense.	Average per Pupil.				
		1897.	1896.	1895.	1894.	1893.
High Schools	$3,567 48	$3.398	$3.403	$2.925	$3.794	$3.969
Grammar Schools	4,823 41	1.053	1.527	1.418	1.301	1.106
Mixed Schools	2,739 30	1.105	1.995	1.083	1.264	1.005
Primary Schools	1,797 68	.420	.444	.325	.369	.226
Kindergartens	317 53	.634	.580	.251	.588	.497
Evening Schools	202 77	.....	.....	.....	.....	.....
Special Teachers	72 03	.....	.....	.....	.....	.....
Miscellaneous expenses (not chargeable to any grade)	578 87	.....	.....	.....	.....	.....
	$14,099 07	.....	.....	.....	.....	.....
Less sale of 2 envelopes	04					
	$14,099 03	$1.094	$1.436	$1.152	$1.243	$1.109

The expenditures for the school year 1896–97 are very much less than for the preceding year. The decrease is $3,631.41, an average of $0.342 per pupil. The average cost per pupil is the lowest since 1889, and, with the exception of 1887, 1888, and 1889, the lowest since the introduction of free text-books in 1884. The details are as follows: —

	Expenditures.	Decrease.	Increase.
Text-books	$6,732 57	$2,621 90	.....
Desk and Reference Books	192 37	144 90	.....
Copy and Drawing Books	739 51	568 05	.....
Apparatus and Furnishings	1,241 12	.....	$204 67
Printing	237 14	70 06	.....
Expressage and Labor	250 00	97 40	.....
Repairing Books	289 04	.....	58 34
Diplomas	168 50	.....	14 98
Tuning Pianos	25 25	.....	12 75
Miscellaneous Supplies	4,911 14	419 84	.....

The decrease in the cost of text-books is principally due to the recent introduction of Frye's complete geography, so that almost nothing had to be spent for repairing or replacing this expensive book. No new school had to be furnished with desk and reference books, so that this item is unusually small. The substitution of paper for drawing books caused a large part of the reduction in copy and drawing books, the cost of these having been $471.04 the previous year. Part of the decrease in expressage and labor is due to the fact that the assistance in the packing room has been charged heretofore to this account, and many small packages are now delivered by the porter instead of by express.

The introduction of the electric current into the laboratories of the English high school at the expense of $126.00, additional physical apparatus for both high schools, and two pianos for the kindergartens explain the greater expenditure for apparatus. Two hundred fifty more books were rebound; a larger number of pupils were entitled to diplomas at graduation; and there were more pianos to be tuned; each increasing the expenditure under its respective head.

The decrease of $419.84 in the cost of miscellaneous supplies deserves more attention, since, on account of the substitution of paper, pens, and pencils for slates and for drawing books, a steady annual increase was to be expected. This shows that the teachers

are careful in the schools, and also that the agent is watchful in the distribution of supplies, and especially that he is economical and prudent in the purchases. The committee wish again to express their appreciation of his unremitting care and great devotion to the interest of the city and the schools.

In order still further to assist the agent in his increasing duties, the committee on supplies, with the approval of the Board, have appointed an additional clerk at a salary of $500 a year from November 1, 1897.

In compliance with chapter 181 of the acts of 1895 the committee on supplies have provided flags for all the school buildings, and flagstaffs for all except the Corlett and English high schoolhouses at an expense of $522.50.

School Accommodations.

The following is the report of the committee on schoolhouses:— During the past year the sanitaries at the Boardman and Corlett schoolhouses have been placed inside the buildings. The sanitary condition of the school buildings has been much improved in the last six years; the ventilation, however, in several instances is bad, especially at the Sargent and Washington schoolhouses. These buildings should be given up. In the summer vacation the means of heating the Dana school were improved and a fire-escape was provided.

The committee renew the recommendations of their last report regarding the Felton and Gannett schoolhouses, but do not urge them at this time; since the Felton, when remodelled, would accommodate no more pupils, and the addition of two rooms at the Gannett school can be deferred, provided the new schoolhouses are built, as requested. The Otis schoolhouse should be remodelled. It is now an eight-room brick building with winding staircases. The interior can be altered satisfactorily, and the outside is very good. An iron fire-escape is needed immediately. During the summer vacation the two unfinished rooms in the Taylor schoolhouse were finished and furnished. These rooms are now occupied.

On December 1, 1897, thirteen thousand three hundred ten children belonged to the public schools — four hundred twenty-two

more than twelve months ago. The Russell school has relieved the pressure in Old Cambridge, but that at North Cambridge and in Cambridgeport east of Norfolk street has increased. In response to a request from the school board a special committee of the city council was appointed to confer with this committee. For the information of the joint committee the superintendent of schools prepared a statement of the conditions existing in these localities. The recommendations of the committee on schoolhouses, which met the approval of the joint committee, were the speedy completion of the Peabody schoolhouse, the erection of a twelve-room building with a hall on land now owned by the city on Norris street, the erection of a similar schoolhouse in the vicinity of Windsor street for the Allston school, and the use of the Allston building instead of the Sargent for a primary school. On the completion of the new Latin schoolhouse next year, the building on Fayette street will be available for a grammar school ; and an eight-room schoolhouse can be built on the Dana school lot on Centre street for primary pupils.

The Russell school was opened in September, and nine of the ten rooms are now occupied. All the schoolrooms are sunny and pleasant, the ventilation and heating are good, and the arrangement of the building is excellent. In this connection the committee would call attention again to the importance of having a paved sidewalk in front of every school building ; such a sidewalk is indispensable to the comfort and health of pupils and teachers and to the neatness of the halls and schoolrooms. The cost of this should always be included in the estimate for a new schoolhouse, since it is difficult to get an appropriation for the purpose after the building is completed. Last year a brick sidewalk was laid in front of the Sleeper schoolhouse in North Cambridge. Work should be done each year at the other schoolhouses where there is no paving, until all are cared for.

On March 5, a fire occurred in the Sleeper schoolhouse during the afternoon session. The calmness of the teachers prevented a panic, and the pupils were sent from the building in safety. The school board at its next meeting adopted the following words of commendation : —

"The school committee of Cambridge desire to place on record their congratulations and thanks to the principal of the Sleeper school and her associate teachers, for the skilful and successful manner in which the pupils were dismissed at the time of the fire in that building on the 5th inst."

The yards at many of the schools look much better for the work done by the park department, but much still remains to be done.

The committee recommend that some provision be made so that the appropriation for care and repair of schoolhouses need not be diverted to pay for damages caused by fire. Annually for several years much has been spent in this way unavoidably, and consequently improvements and repairs which had been planned have had to be deferred. The method suggested by the superintendent of public buildings in his last annual report seems a good one, and the committee urge the adoption of this or any other plan which will tend to the same result.

The use of schoolrooms for polling places is very undesirable, because the pupils are left uncared for and lose instruction for at least one day. If this cannot be avoided, it should be limited as much as possible; so that only the room actually occupied for voting shall be closed, and that for no longer than from Monday noon through Tuesday.

Two janitors have died, two have resigned, and five have been appointed during the year. William H. White was the oldest janitor in the city in term of service and probably also in years; his work was satisfactory to the principals of the two schools of which he had the care, and was continued until a few days before his death, which resulted from a fall while working at the Allston school. The employment of Edward B. Dale to oversee the heating of the schoolhouses has produced the result predicted by the committee. The buildings are more uniformly and more economically heated, and better cared for in other respects, than formerly. Mr. Dale's request for increased pay on account of his increased duties has already received the approval of this committee and the school board.

In conclusion, the committee wish to express their appreciation

of the efforts of Mr. Gray, superintendent of public buildings, to furnish larger and better school accommodations.

The following extract from the inaugural address of the mayor shows the action of the city council since the above report was made: —

"A committee of the school board met a special committee of the city council in December, and after a careful consideration of buildings needed to accommodate the large increase of pupils to which I called attention a year ago, an order was introduced into the city council recommending the appropriation of $150,000, — for an addition to the Peabody school as originally planned; the erection of a twelve-room building with hall, on land bought for this purpose on Norris street; and the erection of a similar building near Windsor street in Ward Two."

The city council adopted the report of the committee, unanimously passed the appropriation, and authorized the treasurer to provide for the same by a loan.

Plan of the School Report.

For many years the subject matter and arrangement of the statistical part of the school reports have remained essentially unchanged; and for the past few years each report has contained certain definite information relating to the organization and conduct of the schools such as is frequently sought by parents or persons interested in school affairs. The same general plan has been followed in preparing this report.

Latin School. March 1, 1886, the Classical and English departments of the Cambridge high school were made two separate schools, called respectively "The Cambridge Latin School" and "The Cambridge English High School."

The following table shows the growth of the Latin School and the cost of instruction from year to year, beginning with the year 1887, the first full year of its organization: —

December 1.	Number of Pupils.	Number of Teachers.	Cost of Instruction.	Cost per Pupil.	Number of Graduates.
1887.....	238	9	$11,615 00	$48 80	12
1888.....	231	10	12,211 00	52 86	22
1889.....	219	10	12,555 00	57 78	27
1890.....	227	10	12,607 41	55 54	17
1891.....	230	10	12,967 50	56 38	36
1892.....	262	10	12,751 07	48 66	22
1893.....	311	11	13,425 66	43 17	23
1894.....	368	12	14,359 66	39 02	27
1895.....	388	14	15,059 58	38 81	25
1896.....	371	15	16,525 00	44 54	34
1897.....	373	16	17,335 00	46 47	35

The cost of the Latin school to the city is less than the above sum by the amount received from the Hopkins fund, which can be used only for classical instruction. Were this amount deducted, the annual cost per pupil would be from two to three dollars less than given above, according to the number of pupils in the school.

The course of study is arranged for five years, and is almost wholly decided by the requirements for admission to Harvard College. Although the course is arranged for five years, sixteen per cent of all the graduates have completed the work in four years. The following is the rule in regard to the admission of pupils to the Latin school, and also to the English high school; "Pupils who have received the diploma of their respective grammar schools certifying that they have completed the prescribed course of study, may be admitted to either high school without an examination. For other persons who desire admission, an examination shall be held at the beginning of the autumn term under the direction of the committee on high schools, but pupils may be admitted to advanced standing at any time. No pupil from any class in a grammar school shall be examined who does not present a certificate that he has pursued his studies during vacation."

For non-resident pupils the tuition is fifty dollars a year, payable in advance, one-half at the beginning and the other half at the

middle of the school year. The sessions of the school begin at 8.30 A. M., and close at 1.30 P. M.

A new building is being erected for this school, and it is expected that it will be ready for use by the middle or last of next October.

English High School. The English high school was organized March 1, 1886.

The following table shows the growth of the English high school and the cost of instruction from year to year, beginning with the year 1887, the first full year of its organization: —

December 1.	Number of Pupils.	Number of Teachers.	Cost of Instruction.	Cost per Pupil.	Number of Graduates.
1887	320	12	$13,950 00	$43 59	49
1888	363	12	14,045 00	38 69	42
1889	455	14	16,157 96	35 51	52
1890	518	15	17,962 50	34 68	37
1891	575	16	18,767 50	32 64	48
1892	613	19	20,488 50	33 42	77
1893	656	19	22,095 00	33 68	95
1894	709	21	23,051 00	32 51	91
1895	674	21	24,369 40	36 16	89
1896	679	21	24,612 00	36 25	72
1897	730	23	25,194 09	34 51	90

The course of study is arranged for four years. In 1888, manual training was included in the course, the instruction being given at the Cambridge manual training school. Provision is also made for a commercial course of two years. Pupils who have finished this course, and who desire to continue their studies two years longer, may do so and receive a diploma.

The requirements for admission to this school are the same as for admission to the Latin school.

For non-resident pupils who do not take the manual training course, the tuition is fifty dollars a year. For those who take that course, it is one hundred fifty dollars. In both cases the tuition is

payable in advance, one-half at the beginning and the other half at the middle of the school year.

The sessions of the school begin at 8.30 A. M., and for pupils not taking the manual training course end at 1.30 P. M. For pupils taking that course the sessions end at 2.30 P. M.

Manual Training School. The "Cambridge Manual Training School for Boys" was founded by Mr. Frederick H. Rindge. It is managed by a board of trustees. The land, the buildings, and the equipment were the gift of Mr. Rindge, and the current expenses of the school are paid by him. Although the manual training school is supported by private munificence, and the mechanical work is carried on under the direction of a superintendent responsible only to the founder, it is, nevertheless, in its essential features, a part of the public school system. All who take the regular course are enrolled as pupils of the English high school, and their academic work is carried on under the direction of the principal of that school. The school was opened in October, 1888. The first class numbered sixty-two. At the beginning, the course of study was arranged for three years. In 1893, it was changed to a four years' course. Seven classes have graduated; the number of graduates being one hundred sixty-one. The number of pupils in the school at the present time is one hundred seventy-eight.

Manual Training in the Grammar Schools. The Rindge manual training school provides for the pupils of the high schools; but in the opinion of the superintendent, instruction in manual training should also be given to the pupils of the grammar schools. The lack of room in the grammar school buildings has been an obstacle to the introduction of this important branch of instruction. A beginning has now been made in the Holmes schoolhouse. A few of the pupils of the eighth and ninth grades here receive instruction, not in school hours, but on Saturdays. Forty boys are taught sloyd, and ninety-six girls are learning to cook. These forty boys were selected from three hundred forty-six boys who desired the instruction, and there were more than four times ninety-six girls who wished to join the class in cooking.

The expense for the instruction in sloyd is paid by the city, and that for cooking by the Cantabrigia Club. Mr. John D. Billings is the teacher of sloyd, and Miss Emma L. Theall of cooking.

When the proposed new schoolhouses are completed, the lack of room will no longer be an obstacle to the introduction of manual training into the grammar schools.

Wellington (Training) School. This school was opened in September, 1884, and differs from the other schools in this respect, — all the grades, except the eighth and ninth, are taught by young teachers. Their work, however, is done under the immediate supervision of a master and three assistants, who are held responsible for the instruction and management of the school. For several years the seventh grade has been taught by a graduate of the training class.

The object of conducting a school on this plan is to give the Cambridge young women who desire to teach, and who have made special preparation for the work, an opportunity to gain experience under conditions favorable to their own success, and without prejudice to the interest of their pupils.

Graduates of the English high school or of the Latin school, who have also graduated from one of our State normal schools or from the Boston normal school, are preferred candidates for the position of teacher in this school. Other persons of equal attainments may be elected.

The required term of service is one year; but teachers may be excused or dismissed at any time by the committee on the training school.

That the direct influence of the school may be continued for a longer period than one year, it is the duty of the master or one of the supervising teachers to visit the schools of the graduates, if teaching in Cambridge, three times during the first year of service.

The money compensation for the service is two hundred dollars. Teachers employed after the required term of service are paid at the rate of three hundred dollars per annum.

The school contains all the grades of the grammar and primary schools, the number of pupils being from eight to nine hundred.

The cost of the school depends on the number of pupils. The limitation is, that the cost per pupil shall not exceed the average cost of pupils in the other schools of the same grades.

By the rules of the school board, the committee on the training school is authorized to employ six teachers, at a salary not exceeding four hundred dollars per annum, to act as substitutes in the grammar and primary schools, and when their services are not so required, to work in the schools to which they shall be assigned by the superintendent; the amount received by each teacher as a substitute to be deducted from her salary. These teachers are usually assigned to the training school, that there may be at that school a sufficient number of teachers to make it practicable for the members of the training class to visit other schools of special excellence. The following is the report of the committee : —

Your committee is glad to report another year of successful work at the Wellington training school; a year of added numbers and of increasing efficiency.

Since December 1, 1896, thirty-nine young teachers have been connected with the school. Of these, twenty-five entered during the year and fourteen were graduated, of whom twelve have received appointments in our Cambridge schools.

On the first of September, Miss Susan G. Lombard, after six years of conscientious and efficient service to the school, resigned her position of supervising assistant to become a teacher in the model school connected with the State normal school at North Adams. The two remaining supervisors divided Miss Lombard's work between them until her successor could be appointed. After careful consideration your committee selected for this position Miss Margaret Kidd, for twelve years principal of the Reed school in North Cambridge, and on November 18, this transfer was approved by the school board.

On October 29, nine hundred one pupils were in attendance, the largest number ever belonging to this school. For this large number the accommodations have been entirely inadequate. All the rooms have been overcrowded, and about eighty children have been taught in the hall.

Only one change has taken place in the membership of this committee; that made by the resignation of Mr. Charles F. Wyman, and the appointment in his place of Mrs. J. H. S. Lansing.

Thanks are due to the special teacher of botany and the superintendent of parks for improving the school yard. Beds of shrubs and of wild flowers have been planted and these will be sources of interest and pleasure both to teachers and pupils.

That the training school is a helpful influence to young teachers, and that it directly and indirectly contributes to the strength of our Cambridge schools, has been acknowledged for some years. It is, however, a satisfaction to have recognition of success from outside sources. This has come recently from the unqualified approval of the school, after thorough investigation of its methods, by a committee from another city where it had been proposed to establish a similar school. One member of that committee, who was opposed to such schools when he came, went away convinced of their importance and desirability.

There are forty-six graduates of the Wellington school teaching in Cambridge whose salaries have not yet reached the maximum. Were these places filled by teachers with the maximum salary, as would probably be the case with teachers obtained from other sources, the expenditure for schools this year would be increased six thousand dollars. In view of these facts, would not the city be justified in spending more money on its training school? Would it not be a wise policy to pay higher salaries to the teachers of this school, in order to procure and retain the best available material for its teaching force?

Grammar Schools. The number of pupils in these schools on the first of December was six thousand eighty-one; and the number of teachers, including masters and special teachers, was one hundred fifty-seven.

The cost of instruction for each pupil for the year has been eighteen dollars thirteen cents. This does not include the cost of supervision or of special instruction.

The course of study is for six years, but the schools are so classified as to give the pupils an opportunity to complete the course in four years or in five years. The average age of the pupils who entered last September was nine years eleven months. The number of graduates was five hundred twenty-one, their average age being fourteen years eleven months. Of these, six per cent completed the course of study in four years, thirty per cent in five years, fifty-one per cent in six years, and thirteen per cent in seven or more years.

Pupils are admitted by classes from the primary schools at the beginning of the autumn term ; but individual pupils are admitted at other times, if it is deemed advisable by the sub-committee or the superintendent.

Promotions to the high schools, and from grade to grade in the grammar schools, are made by the teachers under the direction of the masters and the superintendent. No regular pre-announced examinations are held in these schools, but the results of such written exercises and written reviews as the teachers hold from time to time are used as a part of the basis of promotion.

The thoroughness with which the work is done in any school is shown in part by the ability of the pupils to do the work in the high schools. The pupils are admitted to the high schools on trial; and by a rule of the high school committee, any pupil who fails to maintain a suitable rank is reported to that committee, and no pupil thus reported can continue in either high school except by a special vote. Pupils not permitted to remain in the high schools have the privilege of going back to their respective grammar schools, and of returning to either high school at the beginning of the next school year.

In the grammar schools, special teachers are appointed to help such pupils as seem able to do the work in less than six years, and to aid those who without personal instruction would require more than six years. This action of the committee removes the most serious objection to the graded system of schools.

Primary Schools. The primary schools are under the general supervision of a teacher known as a "Special Teacher of Primary

Schools," whose work is done under the direction of the superintendent of schools.

The number of pupils in these schools on the first of December was five thousand five hundred forty-three, and the number of teachers was one hundred twenty-seven, being an average of forty-three pupils to a teacher. The cost of instruction for each pupil for the year has been thirteen dollars eighty-four cents. This does not include the cost of supervision or of special instruction.

The course of study is for three years. Children five years old are admitted to the first grade at the beginning of the school year and during the first week in March. Forty-three per cent of the pupils at the present time are in the first grade, thirty per cent in the second, and twenty-seven per cent in the third.

One thousand two hundred ninety-two pupils graduated last June, at an average age of nine years nine months. Of these, five per cent completed the course of study in less than three years, sixty-three per cent in three years, and thirty-two per cent in more than three years.

Pupils are promoted to the grammar schools, and from grade to grade in the primary schools, on the judgment of the teachers, under the direction of the special teacher of primary schools and the superintendent. Promotions by classes are made annually at the beginning of the autumn term; but individual promotions are made at other times, if it is deemed expedient by the sub-committee or the superintendent.

Pupils are promoted to the grammar schools on trial, and those who show by their work that they are unprepared are returned to the primary schools.

Kindergartens. There are now eleven kindergartens. All the kindergartens are in school buildings except one, and that is in a house owned by Mrs. Shaw, who generously gives the city the use of two rooms furnished and heated. The number of pupils is five hundred eighty-three, and the number of teachers twenty-two.

The cost of instruction the past year has been nine thousand eight hundred seventy dollars twenty-eight cents, and the cost per

pupil sixteen dollars ninety-three cents. The following is the report of the committee :—

The year just closing has been one of gain for our kindergartens both in number and quality. Two new kindergartens have been opened, one in the Corlett schoolhouse, the other in the Willard.

Miss Fisher, the director of the Boston kindergartens and an acknowledged authority on kindergarten work, has for the second time visited our kindergartens and reported upon them in writing to this committee. As before, her observations and suggestions have been of great value to your committee. Our kindergartners attend Miss Fisher's program lectures each week.

By the efficient efforts of our chairman, that essential of a well-equipped kindergarten, a piano, is now supplied to all our kindergartens. Eight of the eleven are owned by the city; the other three are loaned by public-spirited individuals.

The observers have been given in charge of the special teacher of primary schools, and her wise assignment is proving a great improvement upon the no-method obtaining heretofore. The kindergarten seems to be valued by the individual and the community in proportion to the knowledge possessed of its theory and practice.

Your committee has aimed to supply the most needy parts of Cambridge with kindergartens first. By the addition of five to those already established, the need of the city in its kindergarten department will probably be met for the present.

Music. Instruction in music by the National or Mason System is given by the regular teachers in all grades, and in the high schools by the director of music. All the schools are under his supervision, and every pupil who is capable of learning to sing is required to give attention to the subject.

Twenty minutes a day in primary, and ten minutes a day in grammar grades are devoted to this study, and pupils are taught to sing and sustain their parts in reading from the simplest to the most difficult compositions in two, three, and four parts.

In the high schools, forty-five minutes a week are given to the

study of musical form and expression as found in choruses, quartettes, trios, etc., from the standard operas and oratorios.

The music committee reports that teachers, pupils, music director, and committee have all worked in *harmony*.

Drawing. The course of instruction in drawing includes form, color, and designing.

The study of form by means of type models, clay modelling, and drawing, is begun in the first primary year, and is succeeded in the grammar grades by object drawing, drawing with instruments, and drawing from nature. The latter subject receives especial attention during the spring and autumn months. Color is studied in all the grades, colored paper being used in the lower grades, and water colors in the seventh, eighth, and ninth grades.

The course of study is a modification of the Prang system. No drawing books are used, but the manuals are retained for the use of the teachers.

Designing and historic ornament form an important part of the course.

The report of the director of drawing was endorsed by the committee on drawing. It is as follows: —

The primary schools are visited on an average once a month by the assistant teacher of drawing, and twice during the year by the director of drawing.

In order that a high standard of class work may be maintained, it is very desirable that the pupils should frequently receive inspiration and encouragement from the special teacher. With the rapid growth of the city, and the consequent increase in the number of classes, it may, in the near future, be found expedient to provide additional assistance for this study either in the English high school or in the primary department. Three-fifths of the time of the assistant is devoted to the primary classes, while the other two-fifths is given to the English high school.

The grammar schools receive rather less than four-fifths of the director's time; the other one-fifth being given to the English high school. He visits the grammar schools on an average once a month,

except when the time is given to the primary schools. Besides examining and criticising class work the director finds opportunity for usefulness on these visits in illustrating and explaining before the classes some of the more difficult art subjects.

The setting aside of the drawing books a year ago, besides being in the line of economy, has proved advantageous in several ways, and in no wise detrimental. The latest feature in the color lessons, the introduction of color work in the seventh, eighth, and ninth grades of the grammar schools, will in due time bring valuable results. The teachers are now being instructed in the science of color and in the handling of the materials, and the lessons in the classes will begin after the holiday vacation.

In the English high school provision is made for one drawing lesson per week, the assistant teaching this subject in the fourth class. The nine divisions of this class require two days each week of the teacher's time. Pupils above the fourth class may take drawing and water colors as optional studies, these lessons being given by the director each Tuesday. The classes are larger than last year especially those in the optional work.

Besides giving full attention to the day and evening schools, the director meets the grammar school teachers by grades, and has a teachers' Tuesday evening class in art subjects, numbering over fifty members.

The director freely expresses his appreciation of the enthusiasm and zeal with which the teachers and the pupils are working, and finds it a genuine pleasure to labor among them.

Botany. The work in botany is begun in the first grade and continued through the three primary grades. There has been no radical change in the course as outlined for a foundation. This course calls for material easily obtained in the vicinity of Cambridge; wild flowers in September, leaves and twigs in October, fruits and seeds in November, evergreens in winter, buds and seeds in early spring, and growing wild plants in May and June. The fact that botany is an outdoor study and that "He is a good naturalist who knows his own parish" has been kept uppermost.

Therefore while following in the main the work indicated, it has been done with reference to immediate environment. Markets and florists' windows have been excellent substitutes for open fields. Plants in the schoolrooms are always available. Exchanges from school to school have helped. The city parks have been of great assistance. Some outdoor lessons have been attempted with results that warrant their continuance.

To the superintendent of parks, we are indebted for help in establishing school gardens. These gardens are undertaken at the request of the teachers with the coöperation of the older pupils. They are to contain our native wild plants which may be used to teach types of growth, and to illustrate the reading lessons and literary gems in use. The new supplementary reading is still another aid in this direction.

During the year, some attention has been given to schoolroom decoration which shall be in harmony with the season and tend to make the pupils conscious of nature around them.

Blackboard calendars, seasonable fruits and flowers, and simply mounted pictures of natural scenery, contributed by the pupils and teachers, and changed as the season changes, have been used.

With a view to broadening the work, simple observations of natural phenomena are being made in all the rooms, and some simple lessons on animals are being tried in the first grade.

Sewing. Sewing is taught to the girls of the three lower grades of the grammar schools. Forty-five minutes are given to the work once a week in each grade. Two teachers are employed the full time, and one teacher three-fifths of the time. The following is the report of the committee :—

The amount of work, the order in which the various kinds are taught, the time, the method, and the teachers are the same as last year. The boys of the fourth grade have not availed themselves of the permission granted them to learn this branch of manual training. Your committee asks the coöperation of the superintendent and of the teachers of the fourth grade in a definite effort to be made in the new year to interest these boys in sewing.

Cooking. While no provision has been made for teaching cooking in the schools, it is taught out of school hours on Saturdays to a limited number of girls of the ninth grade. This is done at no expense to the city beyond the use of a room, heated and cared for. The Cantabrigia Club is interested in the work, and has made provision for this instruction.

The superintendent hopes that at no distant day cooking will be taught in the schools as is permitted by the statutes.

Vertical Writing. In September, 1894, vertical writing was introduced experimentally into the schools for one year. The experiment was tried in all the grades of three primary schools, and in the four lower grades of three grammar schools. The results were so satisfactory that the vertical system of writing was adopted for all the schools.

Gymnastics. The Ling system of physical training has been introduced into all the grades of the primary and grammar schools. Games supplementary to the gymnastic work have been introduced throughout the primary schools. These games are exercises in the form of play, and thus serve the double purpose of training and amusement.

Fifteen minutes are given each day to the gymnastic work. The instruction is given daily by the regular teachers under the supervision of the director of gymnastics, who visits each schoolroom, excepting the eighth and ninth grades, as often as time will allow, and who also holds monthly meetings with the teachers.

The essential aim of the teaching is to make the gymnastic period one of healthful exercise and recreation, through the use of the movements which have become more or less automatic. To this end each movement is repeated several times, and is taken forcibly, freely, and in varied rhythms.

Where it is practicable, as it is in the grammar grades, the discipline during the gymnastic period should be a matter of self-control on the part of the pupil, prompted by a desire for health and a comprehension of the meaning of each movement. The

following is the report of the committee on hygiene and physical culture :—

During the past year, the gymnastic exercises have been somewhat modified. At its meeting in February the Board ordered that fifteen minutes be given to physical exercises each day. This increase in time of five minutes a day renders it possible to make the exercises more free and enjoyable ; and while the educative element in them is not forgotten, the recreative and hygienic are encouraged. The teachers are urged to observe and to correct the faults of individuals as well as of classes. The director of gymnastics in her annual report to the committee says : "We are working towards and gaining in self-control, precision, vigor, and freedom. The tenseness and rigidity are gone ; the hygienic element has been introduced into the exercises, and the educative end of the day's order has, I believe, not been sacrificed.

I feel that the children are stronger than they were a year ago, because the vigor and duration of a movement which last year left them limp, pale, and out of sorts, works quite differently this year ; and as a rule I leave the children looking bright and happy, even willing and ready for more.

In the grammar grades, the educative side of the movement is emphasized ; while in the primary schools stress is laid upon the hygienic end of the day's order.

A few minutes of freedom of the room or its equivalent is given in the grammar grades, while in the primary grades the games which we have incorporated into the day's order serve as exercise and recreation. It is interesting to note that the more familiar the children become with a game, the more they like it.

I am giving the old games and teaching new ones ; and, although there are exceptions, the teachers, as a rule, have caught the spirit, and have ceased to be annoyed by the glee or even the hilarity of the children, and therefore this part of the work is gaining in spontaneity every day."

The hygienic condition of the school rooms has been changed but little. Request for new furniture in place of old in six rooms was made to the superintendent of buildings last summer, but was met

by the plea of "no funds." There is great need of new furniture, a need which the expenditure of five thousand dollars would scarcely meet. In one room in the Agassiz building the furniture was turned, so that now the light falls on the pupils' left.

The Sleeper building has been much improved by tinting the walls. The two newer buildings lack this important finish. The rooms of the Taylor and Russell are light and cheerful, but the whiteness of the untinted plaster walls is very trying to the eyes. Tinting the walls and painting the boards green should be included in the contract for a building, as certainly as an efficient heating apparatus.

The room in the Putnam building which was dark is now satisfactorily lighted, the adjacent building which shaded it having been removed; but two in the Harvard are still shaded by a tree which makes them so dark at times that the eyes of teachers and pupils must suffer.

School Libraries and the Public Library. The English high school has a library of about three thousand volumes. The Latin school has only about one-third this number. Comparatively few books of a miscellaneous character have been added to these libraries for several years, the public library meeting the demand for such books. The need of the schools is for books of reference and for sets of books for class study.

The grammar schools, with the exception of the Morse and Webster, are not supplied with books for general reading. These are obtained from the public library, and during the year from seven to eight thousand books have been delivered to the schools.

The library and the schools are brought into close relations to each other. The librarian and his assistants spare no pains in making the library serviceable to teachers and pupils alike.

Evening Schools. There are five evening schools, — one high school, and four elementary schools. By the rules of the committee these schools begin on the second Wednesday of October, and continue Monday, Wednesday and Friday evenings for fifty evenings.

The sessions begin at half past seven, and continue two hours. No session is held on the evening of a holiday or during the vacations of the day schools.

The evening high school is held in the English high school building, and instruction is given in the following subjects: arithmetic, book-keeping, penmanship, English composition, English literature, civics, history, algebra, geometry, phonography, Latin, French, and German. The cost of this school for 1896–97 was: for salaries of teachers, one thousand two hundred seventy-four dollars fifty cents; care of buildings, lighting, etc., six hundred nineteen dollars forty cents; text-books and supplies, sixty dollars forty-two cents; a total of one thousand nine hundred fifty-four dollars thirty cents, or thirteen dollars sixty-five cents per pupil on the average attendance of one hundred forty-three.

The evening high school offers a course of three years, and nine diplomas were given at the close of the school.

The evening elementary schools occupy rooms in four of the grammar school buildings, the Allston, Putnam, Shepard, and Webster. The cost of these schools for 1896-97 was: for salaries of teachers, two thousand eighty-six dollars; care of buildings, lighting, etc., one thousand three hundred sixteen dollars twenty cents; text-books and supplies, sixty-four dollars twelve cents; a total of three thousand four hundred sixty-six dollars thirty-two cents, or eleven dollars thirty-six cents per pupil on the average attendance of three hundred five.

No definite course is arranged for the elementary schools, but there is an opportunity and an effort for pupils to prepare to enter the evening high school.

The committee reports that the evening schools opened this year with slightly increased numbers in all the departments, and the attendance has been very satisfactory to this time. The schools have been in operation twenty-two evenings, and the attendance is as follows:

The high school, with an enrolment of three hundred twenty-three, has averaged two hundred twenty-five pupils, with eight assistants, or twenty-eight pupils to each assistant. The principal and curator are not included in this average.

The Allston school, with an enrolment of three hundred twenty-five, has averaged one hundred fifty-seven pupils, with fourteen assistant teachers, or eleven pupils to each assistant.

The Putnam, with an enrolment of about three hundred fifty, shows an average of one hundred fifty-six pupils, with fifteen assistants, or ten pupils to each assistant.

The Shepard, the only school showing a smaller enrolment than last year, has enrolled one hundred nine, and shows an average attendance of forty-five pupils, with four assistant teachers, or eleven pupils to each assistant.

The Webster school, with an enrolment of two hundred three, shows an average of eighty-nine and five-tenths pupils, with eight and five-tenths assistants, or ten and five-tenths pupils to each assistant.

The salary of the principal in the high school is five dollars per evening, and of each assistant two and one-half dollars; of a principal in the elementary schools two and one-half dollars per evening, and of a teacher in these schools one dollar.

In the high school, the largest classes are those in English literature, English composition, elementary French, phonography, book-keeping, and commercial arithmetic.

In the elementary schools, reading, writing, arithmetic, geography, language, history, and book-keeping are taught in classes, so far as classification is possible. In the Webster school, the principal is interesting the pupils in outside reading along the lines of their work, especially history, recommending and procuring books for them from the public library and inducing them to procure them for themselves.

The Allston school has some Swedes, but fewer than usual; and the principal thinks this may be due to the fact that no Swedish teacher has been secured this year, as heretofore.

In the Putnam, a class of fifteen Armenians is taught by a young man from Armenia, and excellent work is being done. Here, also, is a class of fourteen who hope to graduate this year, prepared to go to the evening high school next year; also four men preparing for the civil service examination for the police force, and three men for that of letter carriers.

The work in all the schools now seems to be on a profitable basis. Those who entered from curiosity, or other motives not serious, have been eliminated, and earnest work is being done.

It takes about one-third of every term to accomplish this; and a problem which demands serious consideration is how to keep these persons out. They are a detriment to those who desire to benefit by the schools, they add much to the expense, as more teachers must be employed at the beginning of the term than are necessary for the proper work of the school, and they seriously demoralize the schools. It is to these that is due the annoyance and loss caused by the pilfering of books, pens, and pencils from the desks, in itself a serious matter.

Perhaps requiring a deposit of a dollar at the opening of the term, to be returned at the close to those who have attended and conducted themselves in a proper manner, or who are compelled to leave before the end of the term, would tend to remedy this evil. The rule of the committee requiring that persons under eighteen years of age be not received unless accompanied by their parents, accomplishes much good when properly enforced. Some action should be taken to prevent such persons from entering the schools, in order to secure the best results in our evening schools.

Evening Drawing School. This school is under the supervision of the director of drawing for the day schools. It is open fifty evenings during the season, three times a week, beginning about the tenth of October. The school is divided into two classes, the mechanical and the free-hand. In the mechanical class, two complete courses are provided, — a three years' course in machine drawing, and a three years' course in architectural drawing. In the free-hand class, provision is made for a three years' course in free-hand drawing, and for a class in modelling in clay.

Diplomas are given to the graduates of either course. Eleven diplomas were given at the close of the term last March. The cost of the evening drawing school for 1896–97 was: for salaries of teachers, one thousand sixty dollars; care of buildings, lighting, etc., four hundred sixty-four dollars forty cents; text-books and

supplies, seventy-eight dollars twenty-three cents; a total of one thousand six hundred two dollars sixty-three cents, or fourteen dollars five cents per pupil on the average attendance of one hundred fourteen.

The salary of a teacher in the evening drawing school is three dollars per evening, of a curator, one dollar.

Truant Officers. Four officers are employed. Their work is done under the direction of a committee of the Board. The city is divided into four districts, and each officer has assigned to him the schools in one district. Among their duties, in addition to those defined by the statutes, are the following: to visit each school at least once a day; to assist the teachers in enforcing the regulations concerning contagious diseases; to prevent the children from loitering about the school premises; to be in attendance at the evening schools; and in the month of May to take the school census. Monthly meetings of the committee are held to hear the reports of the officers, and decide what action shall be taken in regard to the cases brought before them.

Truants are sent by the court to the Middlesex County truant school at North Chelmsford.

Twenty-six boys have been sentenced during the year and fourteen have been released. There were thirty boys from Cambridge in the school on the first of December.

Truant schools should be called parental schools, and the character of the schools should make the name appropriate. The school at North Chelmsford would need no change in its management to make it worthy of the name. The following is the report of the committee on truant officers:—

Number of children in the city between 5 and 15 years of age as reported by the truant offices	14,401
Number of absences investigated	14,468
Truants, first offence	552
Truants, fifth offence or more	143
Truants and incorrigibles on probation by the court	2
Truants and incorrigibles sentenced by the court	26

Children found wandering about the streets not belonging to any school	130
Such children sent to school	113
Visits to mercantile or manufacturing establishments	169
Number of age and schooling certificates issued from the office of the superintendent of schools	282
Number of cases of contagious diseases reported by the board of health; scarlet fever, 265; diphtheria, 307; membraneous croup, 24;	596

These cases are immediately reported by the truant officers to the various schools that may thereby be affected.

There has been a large increase in truancy for the first offence, but a very slight increase in the number that were sentenced by the court, showing that, through the efforts of the teachers and officers, the absence has been corrected before it assumed the condition requiring it to be brought before the court. As a matter of fact, the largest share of the officers' best work is laboring with the parents of these children to correct the bad conditions in the homes that produce truancy.

Under authority from the last legislature, the State board of education appointed a special committee, who will report a measure, to come before the legislature this winter, of a proposed plan for State parental schools, with trustees to be nominated by the governor.

It is proposed to have at least four of these schools, and the present county truant schools may be taken for State schools by the trustees.

Several of the points in the new measure meet with our hearty approval. The first is that it defines truants, which has never been done before. Every child between seven and fourteen years of age, who wilfully and habitually absents himself from school, shall be classed as an habitual truant.

Another classification under this measure is that of an habitual absentee. This class includes every child between fourteen and sixteen years of age, who may be found wandering about in the streets or public places of any town, or city of the Commonwealth, having no lawful occupation, habitually not attending school, and growing up in idleness and ignorance.

Still another new classification is that of "habitual school offender." This includes every child under fourteen years of age who persistently violates the reasonable rules and regulations of the school which he attends, or otherwise persistently misbehaves therein, so as to render him a fit subject for exclusion therefrom.

This third class makes more trouble for the teachers than either of the others, and does much to break down the discipline of the school. They are not truants, but the school would be better off if they were.

By the proposed plan, a pupil will be liable to arrest under the name of the class to which his offence belongs, and, upon conviction, he will be committed to the custody of the trustees of the State parental schools.

In order to give every possible opportunity for the child to reform, and to get the benefit of being released from a parental school, it is proposed to give the court which convicted the child, the power to release him on probation. It is also proposed that a penalty of not more than twenty dollars be imposed upon the parents and guardians who consent to the unlawful absence of their children from school for five days within a period of six months. A penalty of not more than fifty dollars is to be put upon those who knowingly induce any child to absent himself unlawfully from school.

There are many other important provisions in this new measure but the foregoing relate particularly to truancy.

We believe that the establishment of such State parental schools, with trustees to be nominated by the governor, would be a step in the right direction for the better care of truants and of neglected children; and we hope that the more important features of the measure will become a part of our State laws.

In conclusion, we wish to express our confidence in the very faithful work of all the officers; and the committee believe that the work has been done in a manner to merit the confidence of the citizens of our city.

Janitors. Section 31 of the city charter provides that "The

mayor shall appoint the janitors of the schoolhouses, subject to confirmation by the school committee; and that such janitors shall perform their duties under the direction of the school committee."

Supervision of the janitors is assigned to the committee on schoolhouses and health. This committee has held meetings monthly during the year. The principals of the schools are required to report each month to the superintendent of schools whether or not the work is done in a satisfactory manner, and to report any occasion for complaint to the committee on schoolhouses and health.

The heating of the schoolhouses is under the charge of a person appointed for his special fitness for this work. Mr. Edward B. Dale has rendered valuable service during the past two years.

Contagious Diseases. In 1894, the board of health in accordance with the request of the school committee appointed a physician, whose duty it is to examine all cases of contagious diseases reported, and to direct the exclusion from the schools of all pupils whose presence will, in his opinion, be a menace to the health of others. He reports his action on every case to the secretary of the school committee. The physician issues all certificates authorizing such children to return to school, as is provided by chapter 198, acts of 1885.

As a further precaution against contagious diseases, the board of health established February 26, 1896, a system of medical inspection of children in the schools. The city was divided into six districts, in each of which a physician was appointed to visit the schools each day. The physician examines only those children who are indicated by the teachers in the several rooms as having shown symptoms of illness, and such children are sent home if the physician so advises.

The following order was adopted in October: "Ordered, that, once in each term, it shall be the duty of the principal of each school to call the attention of the pupils to the following rule: 'No pupil who has visited any apartment in which a person is, or within two weeks has been, sick with small pox, varioloid, diphtheria, or scarlet fever, shall be allowed to attend school until the expiration of two weeks after such visit.' "

Terms, Holidays, and School Hours. The school year is divided into three terms: —

The time for beginning the autumn term is fixed annually at the regular meeting of the committee in April. The autumn term ends December 23.

The winter term begins January 2 (or the day after that celebrated as New Year's day), and ends on the last Friday in March.

The spring term begins on the second Monday after the last Friday in March, and the time for closing the spring term is fixed annually at the regular meeting of the committee in April.

The holidays are Saturdays; Thanksgiving day, with the preceding day and the day following; the twenty-second of February; the Nineteenth of April; Memorial day; the Seventeenth of June; and in addition to these, for the high schools, Commencement day at Harvard College.

The sessions of the high schools begin at 8.30 A. M., and close at 1.30 P. M. For pupils taking the manual training school course the sessions end at 2.30 P. M. The high schools have a recess of half an hour in each session.

The morning sessions of the grammar and primary schools begin at 9 and close at 11.45. The afternoon sessions begin at 2 and close at 4, except during the months of November, December, and January, when they begin at 1.30 and close at 3.30. The grammar and primary schools have no outdoor recess.

The sessions of the kindergartens are from 9 A. M., to 11.50 A. M.

Teachers, Appointments, Salaries. There are now three hundred fifty-four teachers in the schools of Cambridge. Thirty-six of this number have been appointed during the year. During the same time the city has lost the services of eighteen teachers. Three have resigned from the Latin school, six from the grammar schools, five from the primary schools, and two from the kindergartens. Two have died, namely, Miss Cora E. Laskey, who had taught less than two years, and Miss Emily C. Dallinger, whose appointment dates back to 1868,— the one cut off in the beginning of her work, but a beginning that promised success, the other after a long and faithful service, honored and respected by all who knew her.

There is no rule of the school board in regard to the qualifications of persons who may be appointed teachers in the Latin school and in the English high school, but during these recent years only graduates of colleges have been appointed.

No person is eligible to an appointment in the grammar and primary schools who has not had advantages equivalent to a high school course, a normal school course, and a year's experience in teaching. The same qualifications are required for admission to the training school, except the year's experience in teaching.

No person is eligible to an appointment in a kindergarten who has not taken a course of study for at least one year at some kindergarten normal school approved by the committee on kindergartens and the superintendent of schools.

It is the duty of the committee on examination of teachers to inquire and report as to the qualifications of all persons nominated to be teachers in the grammar schools below the grade of master, in the primary schools, and in the kindergartens, before final action on such nominations is taken by the Board.

It is also the duty of this committee to inquire and report to the Board in executive session, as to the success of any teacher in the employment of the city, when so requested by any member of the Board or by the superintendent; and no teacher whose success is under inquiry shall receive the regular increase of salary, except on the recommendation of this committee.

Any member of the Board who is dissatisfied with a teacher shall give notice of such dissatisfaction to the Board; and all further action in relation to such teacher shall be under its direction.

Experience in teaching, whether in or out of the city, may be considered in fixing the salaries of teachers.

For the Latin school and the English high school, all nominations at a salary other than the minimum shall be made only upon the recommendation of a majority of the high school committee.

For the grammar and primary schools, all nominations at a salary other than the minimum shall be made only upon the recommendation of the three members of the ward committee, or of two members and the superintendent.

For the kindergartens, all nominations at a salary other than the minimum shall be made only upon the recommendation of a majority of the committee on kindergartens.

Under the direction of the superintendent, teachers may visit other schools to observe the discipline and instruction. They may be required to attend teachers' meetings or courses of instruction in methods of teaching for one hour a week, unless excused by the superintendent. Such meetings may be held on Saturday mornings during term time, or at such other times, not in school hours, as the committee on text-books and courses of study may direct. Meetings held by the superintendent, and meetings called by him, at the request of the director of drawing, or the director of music under the authority of the standing committee having supervision of the instruction in these subjects, are in addition to the above requirements.

The salaries of the teachers and school officers are as follows: —

Latin School and English High School.

Head Masters	$3,000 00
Masters	2,000 00
First Assistant	1,050 00
Assistants, first year	700 00

with an annual increase of $50 until $950, the maximum, is reached.

Temporary Assistants	500 00

Substitutes receive two-thirds of the salary of the regular teacher.

Wellington Training School.

Master	$2,500 00
Supervising Teachers (three)	800 00
Teacher of the ninth grade	700 00
Teacher of the eighth grade	620 00
Teacher of the seventh grade (one year's experience)	400 00
Teachers of the other grades	200 00

Grammar Schools.

Masters	$2,000 00
Sub-Masters	1,000 00
Masters' Assistants	700 00
Special Teachers	650 00
Assistants, first year	400 00
Assistants, second year	470 00

with an annual increase of $50 until $620, the maximum, is reached.

Substitutes receive one dollar a session.

Primary Schools and Kindergartens.

The salaries of the teachers of the primary schools and of the kindergartens are the same as those of the assistant teachers in the grammar schools. The assistants in the kindergartens receive for the first year $400, with an annual increase of $40 until the maximum salary, $520, is reached.

Principals of the primary schools receive, in addition to the regular salary, five dollars a year for each separate class in the schools under their charge, and principals of primary schools of seven or more rooms, who are employed in work corresponding to the duties of special teachers in grammar schools, receive thirty dollars additional salary.

The pay of substitutes in the primary schools is one dollar a session.

The pay of substitutes in the kindergartens is two-thirds of the salary of the regular teacher.

Special Teachers and Officers.

Director of Music	$2,000 00
Director of Drawing	1,800 00
Assistant Teacher of Drawing	800 00
Teachers of Sewing	600 00
Substitutes (continuously employed)	400 00
Superintendent of Schools	3,000 00
Special Teacher in Primary Schools	1,100 00
Agent of the Committee on Supplies	2,000 00
Truant Officers (four are employed)	900 00
Secretary of the School Committee	300 00
Page of the School Committee	25 00
Secretary and Librarian of the Latin School	500 00
Secretary and Librarian of the English High School	600 00

The question of the increase of these salaries was before the Board last year, and the superintendent gave some facts which to him seemed to have a bearing on the subject. The question is again under consideration. As the conditions so far as they relate to the teachers and schools remain unchanged, all that the superintendent wrote on the subject a year ago is equally applicable at the present time.

The following is the report of the committee on examination of teachers : —

This committee reports that forty-two teachers have each been visited by four members of the committee, and many of these were

revisited by the same number, the first visit not being wholly satisfactory. This shows at least one hundred seventy-five visits on the part of the committee, averaging twenty-five visits for each member.

Of the above number of teachers, thirty-six have been appointed, three failed of appointment, and three are still under consideration.

FRANCIS COGSWELL,

Superintendent of Public Schools.

[Further information in regard to the schools will be found in the annual report issued by the school committee.]

In School Committee, February 17, 1898.

Voted, That the report prepared by the superintendent be adopted as the annual report of the school committee for 1897, and that the secretary be authorized to append the names of the members of the committee thereto.

SANFORD B. HUBBARD,

Secretary.

Members of the School Committee for 1897.

ALVIN F. SORTWELL, *Chairman ex officio.*

WILLIAM TAGGARD PIPER.	WILLIAM H. CLANCY.
ELIZABETH Q. BOLLES.	ELLEN M. COBURN.
FRANK W. TAUSSIG.	CHARLES F. WYMAN.
ROBERT O. FULLER.	FRANK C. CHAMBERLAIN.
*ALPHONSO E. WHITE.	†JENNY H. S. LANSING.
CAROLINE L. EDGERLY.	GEORGE P. JOHNSON.
‡GEORGE W. BICKNELL.	CAROLYN P. CHASE.
EDWARD B. MALLEY.	FREDERIC W. TAYLOR.

* Resigned, June 17. † Elected, January 26. ‡ Elected, September 21.

REPORT OF BOARD OF PARK COMMISSIONERS

To the Honorable, the City Council of the City of Cambridge :—

Gentlemen :— The Board of Park Commissioners has the honor to submit herewith its fifth annual report for the year ending November 30, 1897, and also the fourth annual report of the General Superintendent of Parks, as required by Section 4 of the Ordinance establishing a Park Department.

During the past several years, a private company has spent vast sums of money in reclaiming the marshes and flats lying on both sides of Massachusetts Avenue, between the Grand Junction Railroad and the river. These lands, with a southern exposure and an Esplanade two hundred feet wide extending along their entire frontage on the river, offer a most advantageous location for residential purposes, and when built upon will add enormously to the taxable values of Cambridge.

It was evident to the Park Commissioners that this Esplanade should extend to West Boston Bridge, and the balance of the flats filled to be used for business or residential purposes. To this end negotiations were carried on for two or more years with the several owners of the flats, and on February 23, 1897, the Board submitted the following report and recommendations :—

Board of Park Commissioners of the
City of Cambridge,
February 23, 1897.

To the Honorable, the City Council of the City of Cambridge :—

Gentlemen :— The Park Commissioners have the honor to present the following report :—

The section of shore between the West Boston Bridge and the

easterly end of the property of the Charles River Embankment Company, with the exception of the small piece between River Street and Western Avenue, is the only portion of the river shore between West Boston Bridge and Cambridge Hospital not controlled by the city.

Negotiations toward acquiring this property have been in progress during the past two years. Upon the terms named in deed and indenture hereinafter annexed, the owners have agreed to transfer to the city all their rights, title and interest in that parcel of land bounded as follows :—

Southerly by the United States pier and bulkhead line, established in accordance with the Statutes of the United States and approved by the Secretary of War on the thirteenth day of February, in the year eighteen hundred and ninety, twenty-five hundred and twenty-two feet, more or less; northwesterly by land of the Charles River Embankment Company, two hundred and thirty-one and thirteen one-hundredths feet; northerly by a line parallel with said pier and bulkhead line and two hundred feet distant northerly therefrom, twenty-one hundred and seventy-five feet, more or less; and northeasterly by Main Street and West Boston Bridge, two hundred and fifty-four feet, provided the city will construct a sea wall along the front of the property, and fill in the Parkway to the established grade, on or before February first, eighteen hundred and ninety-nine, the several owners agreeing to fill the remaining lands to the same grade at the same time.

The title to about one-half of this property now vests in two Trustees. On February first, eighteen hundred and ninety-nine, this trust expires, and the property passes into the control of the seventeen beneficiaries. The Trustees have no power to bind the *cestui que trust* beyond the term of their office, so any agreement must be fulfilled before the expiration of the trust in order to properly protect the interests of the city.

If the Charles River Embankment Company will include in their deed to the city certain restrictions as to building line, etc., the same as required by the Park Commissioners from other owners of property along the river park line, we recommend the

taking by the city of this section of shore property heretofore described.

Should the City Council favor the taking of this property for park purposes under Chapter 508 of the Acts of 1896, the Park Commissioners are ready to proceed with the contracts and specifications, having the assurance that the work can be completed within the specified time.

Respectfully submitted,

GEO. HOWLAND COX,
JNO. O'BRIEN,
HENRY D. YERXA,
Park Commissioners.

Form of Deed and Indenture mentioned in second paragraph of foregoing communication.

KNOW ALL MEN BY THESE PRESENTS, that we, George G. Crocker and Edward P. Fisk, Trustees under a deed from the Heirs of William Fisk, recorded with Middlesex South District Deeds, Book 2,252, Page 32, Mary G. Fiske, of Cambridge, in the County of Middlesex and Commonwealth of Massachusetts, and Edward Kendall, George F. Kendall, James H. Kendall, George B. Roberts, Horace O. Bright, Henry N. Tilton, Frederick W. Tilton, William H. Wood, all of said Cambridge, and said Henry N. Tilton as he is Trustee under the will of Benjamin R. Tilton, in pursuance of the terms of a certain Indenture made by and between George G. Crocker and Edward P. Fisk, Trustees, and others, and the City of Cambridge, a municipal corporation duly established by law in the Commonwealth of Massachusetts, dated May 7, A. D. 1897, and recorded with Middlesex South District Deeds, Book 2,572, Page 368, and in consideration of the covenants and agreements therein contained and to be performed by said City, and for the further consideration of the sum of one dollar and other good and valuable considerations to us paid by said City of Cambridge, and such sum or sums as may in the future be assessed for betterments upon our other land by reason of the taking or purchasing of land for a park or parks, under Chapter 341 of the Acts of 1892, and Chapter 337 of the Acts of 1893, and any and all Acts amendatory thereof and supplementary thereto, do hereby remise, release and forever quitclaim unto the said City of Cambridge, its successors and assigns forever, a certain piece or parcel of land situated in said Cambridge, being all that strip

of land or flats two hundred feet wide bounded and described as follows, viz.: —

Beginning at a point on the United States pier and bulkhead line, on the northerly side of Charles River and southwesterly of West Boston bridge (which said pier and bulkhead line is hereinafter more fully described), at its intersection with the line which divides the lands and flats of George G. Crocker and Edward P. Fisk, Trustees, and Mary G. Fisk, from the lands and flats now or late of Benjamin F. Brown, and running southwesterly along said pier and bulkhead line to the point of its intersection with the middle line of Pioneer Street extended southerly from Main Street; then turning and running northerly along said middle line of Pioneer Street extended as aforesaid, two hundred and thirty-one and thirteen one-hundredths (231.13) feet; then turning and running northeasterly by a line parallel with and distant always two hundred (200) feet northerly from said pier and bulkhead line to the said line dividing the lands and flats of George G. Crocker and Edward P. Fisk, Trustees, and Mary G. Fisk, from the lands and flats now or late of Benjamin F. Brown; then turning and running southeasterly on said dividing line to the point of beginning.

The United States pier and bulkhead line above referred to was established in accordance with the Statutes of the United States, by the Secretary of War, February 13, 1890, and is described in Appendix B of the Annual Report of the Chief of Engineers, U. S. A., for 1890, and the portion thereof running southwesterly from West Boston Bridge beyond the middle line of Pioneer Street extended as aforesaid is described as follows: — Beginning at a point on the northerly side of West Boston Bridge at its intersection with the face of the wharf, and marked by a copper tack through an iron plate on the cap outside of the brick sidewalk, and indicated on the plan by the letter "A"; thence running southwesterly on a curve of 951.34 feet radius (tangent at point "A" to the pier and bulkhead line running between West Boston and Craigie's Bridges) for a distance of 503.01 feet; thence continuing southwesterly on a straight line tangent to said curve for a distance of 6,838.19 feet, etc. The said line is delineated on a plan or tracings referred to in said report.

The described premises are shown on a plan made by Lewis M. Hastings, City Engineer of said Cambridge, dated May 10, 1897, and recorded with the said Middlesex South District Deeds, Book of Plans 104, Plan 43, to which plan reference may be had for a more particular description of said premises. This release is made subject to the covenants and agreements contained in the above named Indenture, which are, until the entire performance thereof, to be of full force and effect, the same as if contained at length herein.

And for the above named consideration we do also respectively, each one to the extent of his ownership only, hereby give and grant unto the City of Cambridge the right to slope or bank the filling, where required for grading said park, to the grade to be established therefor by the Park Commissioners of said City, upon our respective remaining land abutting upon said park, and do also, respectively but not jointly for ourselves and our heirs, executors, administrators, successors and assigns, covenant and agree with the said City of Cambridge that we will not and they shall not make or have any claim or demand against said City for damages in consequence of the omission by said City to build or maintain a retaining wall or bulkhead to support such filling, and further that we will not, and they shall not remove or permit to be removed by any person other than the officers or agents of said City any portion of the filling placed or sloped upon our said remaining land abutting upon said park in grading the same as aforesaid, unless a retaining wall or bulkhead to support said filling shall be built upon the line of our said remaining land abutting upon said park.

And for the consideration aforesaid each of us hereby to the extent of our respective interests therein, release and forever discharge the said City of Cambridge of and from any and all damages, actions and causes of actions whatsoever arising out of and in any way connected with said taking or purchase of the above described land, except such damages, actions and causes of actions as may arise from a failure to carry out the terms and provisions of the aforesaid Indenture dated May 7, 1897.

AND for the above named consideration and the further consideration that said City of Cambridge shall construct along the boundary line of said park, within said parcel of land, a roadway and walk to which we and our heirs, successors and assigns (owners or occupants of adjoining lands of grantors), shall have free access, with the right to use the same for the purposes of a way, subject to such reasonable rules and regulations as may from time to time be made by the Park Commissioners of said City, or by any other board or department having for the time being the control and management of said park, we hereby, for ourselves and our heirs, executors, administrators and successors, respectively covenant with said City of Cambridge, that we and our heirs, executors, administrators and successors will hold our respective remaining land abutting upon said park, and to a distance of one hundred feet therefrom, subject to the following restrictions, which shall be inserted or referred to in any conveyance hereafter made by us or them of the whole or any part of said restricted land: —

1. No building erected or placed upon the premises within one hun-

dred feet of said park and parkway shall be used for a livery or public stable, nor exceed five stories in height above the basement or cellar, nor exceed sixty feet in height from the mean grade of the edgestone or sidewalk in front to the ceiling of the extreme upper story (excepting churches or chapels).

2. No building shall be erected or placed upon said premises within twenty feet from the exterior line of said park; provided that steps, windows, porticoes and other usual projections appurtenant to the front wall of a building are to be allowed in this reserved space of twenty feet, subject to the following limitations, viz: first, that no projections of any kind (other than door-steps and balustrades connected therewith, and also piazzas projecting not more than ten feet) shall extend more than five feet from the rear line of the aforesaid space; second, that no projections in the nature of a bay-window, corner-bay, circular front, or octagon front, with the foundation wall sustaining the same (such foundation wall being a projection of the front wall), will be allowed (excepting oriel windows above the first story on a street corner (unless any horizontal sections of such projections would fall within the external line of trapezoids, the sum of whose bases upon the rear line of the aforesaid space does not exceed seven-tenths of the whole front of the building, and the base of any one of which trapezoids does not exceed eighteen feet, and whose side lines make an angle of forty-five degrees with the base; and each house in a block shall be considered a separate building within the meaning of this limitation.

The restrictions above set forth shall continue in force, except as otherwise provided in the aforesaid Indenture dated May 7, 1897, so long as such roadway and walk shall be maintained by said City of Cambridge, and the grantors, their heirs, executors, administrators, successors and assigns, owners or occupants of grantors' adjoining lands, shall have free access thereto and liberty to use the same for the purposes of a way, subject to the rules and regulations aforesaid.

TO HAVE AND TO HOLD the aforegranted premises to the said City of Cambridge, its successors and assigns in fee simple forever. And we, the said grantors, for ourselves and our heirs, executors and administrators, respectively, to the extent of our ownership, do covenant with the said City of Cambridge that the aforereleased premises are free from all incumbrances made by us respectively. And that we respectively will, and our heirs, executors and administrators shall warrant and defend the same to the said City of Cambridge forever against the lawful claims and demands of all persons claiming by, through or under us respectively, but against none others.

And for the consideration aforesaid, we, Reliance Kendall, wife of

said Edward Kendall, Ina C. Kendall, wife of said George F. Kendall, Etta F. Kendall, wife of said James H. Kendall, Lucy C. Roberts, wife of said George B. Roberts, Junia O. Bright, wife of said Horace O. Bright, Annie M. Tilton, wife of said Henry N. Tilton, Ellen Tilton, wife of said Frederick W. Tilton, and Anna M. Wood, wife of said William H. Wood, hereby join in this conveyance in token of our assent to the same, and hereby release under this instrument to the said grantee all right of and to both dower and homestead in the granted premises.

IN WITNESS WHEREOF, we, the said George G. Crocker and Edward P. Fisk, Trustees as aforesaid, Mary G. Fisk, Edward Kendall, George F. Kendall, James H. Kendall, George B. Roberts, Horace O. Bright, Henry N. Tilton, Frederiek W. Tilton, William H. Wood, Henry N. Tilton, as Trustee as aforesaid, Reliance Kendall, Ina C. Kendall, Etta Kendall, Lucy C. Roberts, Junia O. Bright, Annie M. Tilton, Ellen Tilton and Anna M. Wood, hereunto set our hands and seals this 29th day of June, A. D. 1897.

THIS INDENTURE made this 7th day of May, A. D. 1897, by and between George G. Crocker and Edward P. Fisk, Trustees under a deed from the Heirs of William Fisk, recorded with Middlesex South District Deeds, Book 2,252, Page 32, Mary G. Fisk, of Cambridge, in the County of Middlesex and Commonwealth of Massachusetts, and Edward Kendall, George B. Roberts, Horace O. Bright, Henry N. Tilton, Frederick W. Tilton, William H. Wood, all of said Cambridge, and said Henry N. Tilton, as he is Trustee under the will of Benjamin R. Tilton, parties of the first part, and the City of Cambridge, a municipal corporation duly established by law in said Commonwealth, party of the second part, witnesseth as follows, viz:—

I.

The parties of the first part, in consideration of the agreements of the party of the second part herein contained, each covenanting only for himself and themselves, and his and their respective heirs, successors and assigns, hereby agree with the party of the second part as follows, viz:—

1st. They will remise, release, and forever quitclaim unto the party of the second part, each releasing his or their own right, title and interest therein, all that strip of land or flats situated in the City of Cambridge, 200 feet wide, which is shown on the plan of Lewis M. Hastings, City Engineer of said Cambridge, dated May 10, 1897, and to be recorded herewith, and bounded and described as follows, viz: —

Beginning at a point on the United States pier and bulkhead line, on the northerly side of Charles River and southwesterly of West Boston Bridge (which said pier and bulkhead line is hereinafter more fully described), at its intersection with the line which divides the lands and flats of George G. Crocker and Edward P. Fisk, Trustees, and Mary G. Fisk, from the lands and flats now or late of Benjamin F. Brown, and running southwesterly along said pier and bulkhead line to the point of its intersection with the middle line of Pioneer Street extended southerly from Main Street; then turning and running northerly along said middle line of Pioneer Street extended as aforesaid, two hundred and thirty-one and thirteen one-hundredths (231.13) feet; then turning and running northeasterly by a line parallel with, and distant always two hundred (200) feet northerly from said pier and bulkhead line to the said line dividing the lands and flats of George G. Crocker and Edward P. Fisk, Trustees, and Mary G. Fisk, from the lands and flats now or late of Benjamin F. Brown; then turning and running southeasterly on said dividing line to the point of beginning.

The United States pier and bulkhead line above referred to was established in accordance with the Statutes of the United States, by the Secretary of War, February 13, 1890, and is described in Appendix B of the Annual Report of the Chief of Engineers, U. S. A., for 1890, and the portion thereof running southwesterly from West Boston Bridge beyond the middle line of Pioneer Street extended as aforesaid is described as follows:— Beginning at a point on the northerly side of West Boston Bridge at its intersection with the face of the wharf, and marked by a copper tack through an iron plate on the cap outside of the brick sidewalk, and indicated on the plan by the letter "A"; thence running southwesterly on a curve of 951.34 feet radius (tangent at point "A" to the pier and bulkhead line running between West Boston and Craigie's Bridges) for a distance of 503.01 feet; thence continuing southwesterly on a straight line tangent to said curve for a distance of 6,838.19 feet, etc. The said line is delineated on a plan or tracings referred to in said report.

The releases of the various parties hereto of the first part shall be made forthwith, upon the request in writing of the party of the second part, and shall be made by deeds substantially in the form of deed hereunto annexed and marked "Appendix A."

2nd. They will, respectively, cause to be filled to grade 18, Cambridge grades, all the flats belonging to them, respectively, not already so filled, which are bounded southerly and southeasterly by the said strip of flats to be released to said city as aforesaid, westerly by the middle line of Pioneer Street extended from Main Street to the said strip,

and northerly by Main Street and the West Boston Bridge, such filling to be completed on or before January 1, 1899. And it is agreed that if any one of the parties of the first part shall fail so to fill or to complete the filling of the portion of the said flats belonging to him or them, then the party of the second part shall forthwith proceed to fill as aforesaid such portion of said flats, and the expense thereof shall constitute an indebtedness on the part of the party so failing to fill as aforesaid to the said party of the second part, to secure the payment of which indebtedness the party of the second part shall have a lien upon the lands and flats which it has filled as aforesaid, and if the payment therefor shall not have been fully made when such portion shall be completely filled as aforesaid, by the party of the second part, the party of the second part may sell the whole, or any part of such portion, by public auction, in the City of Cambridge, to the highest bidder, first giving notice of such sale, stating the time and place of sale, with a sufficient description of the land to be sold and of the expense incurred in the filling thereof, by publication at least once a week for six successive weeks, in some one newspaper published in said City of Cambridge, and also in some one newspaper published in the City of Boston; and upon such sale the said party of the second part may, in its own name, or in the name of the party to whom such portion shall belong, convey the same by a good and sufficient deed to the purchaser, and such purchaser shall not be held to see to the application of the purchase money. The party of the second part shall from the proceeds of any such sale, reimburse itself for all costs and expenses incurred by it in filling the portion so sold and for all reasonable expenses incurred in making such sale and conveyance, and shall pay over the balance, if any, remaining to the party whose portion is so sold and conveyed, or to his heirs, successors or assigns. Any sale so appointed may be adjourned from time to time for periods not exceeding seven days each, when, in the opinion of the party of the second part, it shall be expedient in order to secure an advantageous sale, notice of every such adjournment being published once at least in each newspaper in which the original publication of sale was made.

3rd. They will respectively permit the agents and employees of the party of the second part, during and for the purpose of the filling of the said land hereby released, and also of the filling of any portion of the remaining flats of any one of the said parties of the first part under the above provisions, to pass and repass over any of their other flats, whether filled or unfilled, in such manner as the said party of the second part shall deem necessary in order to accomplish such filling; and the parties of the first part will in like manner permit each the

other to pass and repass over their respective flats for the purpose of filling their respective flats, as may be required by this Indenture; but it is distinctly understood and agreed that any right to pass and repass as granted herein shall expire on February 1, 1899.

4th. Each of the parties of the first part, respectively, will give the said party of the second part the right, so far as he or they are able to grant it, to dredge from his or their remaining flats outside of the United States pier and bulkhead line as hereinbefore described, so much material as may be sufficient to fill to the grade established therefor that part of the said strip to be hereunder conveyed which belongs to him or them respectively; but it is distinctly understood and agreed that no dredging shall be done under this clause from the flats within the limit of private ownership (viz., between the shore or upland line and a line one hundred rods distant therefrom toward the main channel of the river), until all available material outside of said one hundred rod line shall have been dredged and used; and such dredging as shall be done hereunder within the said limit of private ownership shall first be done in the parts more remote from the shore and the more remote material shall be first used.

II.

In consideration of the foregoing agreements of the said parties of the first part, the said party of the second part hereby agrees with the said parties of the first part and their respective heirs, successors and assigns, as follows, viz.:—

1st. The said party of the second part shall, on or before December 31, 1897, construct and complete a good and substantial sea wall, equal in all respects to that already constructed by the Charles River Embankment Company, extending along the entire southerly and southeasterly or outside line of the said strip of flats two hundred feet wide, to be released as aforesaid and continuously from the line of the present wall of the said Charles River Embankment Company to the said West Boston Bridge, and shall on or before January 1, 1899, fill to the grade established therefor by the Park Commissioners, the entire said two hundred foot strip to be released to it as aforesaid.

2nd. The said party of the second part shall, within three years from the date of this Indenture, construct and put in suitable and proper condition for use upon said two hundred foot strip, along the northerly and northwesterly boundary line thereof, a roadway and walk to which the said parties of the first part and their successors, heirs and assigns, owners and occupants of the said adjoining and remaining lands, shall have free access, with the right to use the same for the purposes of a way and walk, subject to such reasonable rules

and regulations as may be made from time to time by the Park Commissioners of the City of Cambridge, or other board or department having for the time being control and management of said park and parkway; and it is expressly understood and agreed that said roadway and walk shall always be and remain a public way not less than forty feet in width, and that if the City of Cambridge at any time abandons the use of the remainder of the two hundred foot strip (to be conveyed under this Indenture), as a park and parkway, then the restrictions set forth in the form of deed hereto annexed as aforesaid, and the limitations on the use of said roadway and walk therein set forth shall cease and be void.

3rd. The said party of the second part will permit the parties of the first part and their agents and employees, during and for the purpose of the filling of the remaining flats of the parties of the first part enclosed by said two hundred foot strip as above provided to be done, to pass and repass over said two hundred foot strip, whether filled or unfilled, in such manner as the said parties of the first part shall deem necessary in order to accomplish such filling; but it is distinctly understood and agreed that any right to pass and repass as granted herein shall expire on February 1, 1899.

4th. The said party of the second part shall, in the month of January of each year, beginning with the January next succeeding the date of this Indenture and continuing until the end of ten years after the filling herein agreed to be done by both parties shall have been completed, as a further consideration of the land hereinbefore agreed to be conveyed, and in case said land is so conveyed, pay to each of the parties of the first part, his or their heirs, devisees, representatives or successors, a sum of money equal to the excess of the amount of the taxes which shall be assessed for each such year, upon the lands and flats then owned by such party, his or their heirs, devisees, representatives or successors, situated easterly of the middle line of Pioneer Street extended and southerly of Main Street and the West Boston Bridge, over the amount of the taxes assessed upon the same lands and flats for the year 1896, excluding from such excess the taxes which may be assessed upon any buildings which may be erected after the date of this Indenture; it being intended and agreed that such payment shall be yearly made in respect to all lands which shall continue to be held by the said parties of the first part or by their respective heirs, devisees or successors, but that no such payment shall be made in respect to any of said lands or flats which shall be sold and conveyed to others. All such sums so to be paid shall, by the party of the second part, be deposited with the City Treasurer of the City of Cambridge, and be made payable on

demand to the said parties of the first part, their heirs, devisees, representatives or successors, respectively entitled thereto.

5th. The said party of the second part will assume and pay all such sums as shall be assessed or made chargeable as betterments or otherwise, upon the said remaining lands or flats of the parties of the first part, situated easterly of the middle line of Pioneer Street extended and southerly of Main Street and the West Boston Bridge, by reason or growing out of the laying out, establishment or construction of a park and parkway by the party of the second part, upon the two hundred foot strip hereinbefore agreed to be conveyed, and will also pay all such other charges and sums of money for which the parties of the first part, or any of them, shall be liable, as may be made, or arise from, or be connected with the displacement of tide water caused by the filling of all or any of the said flats as herein agreed upon, if such filling is taken from the Charles River, and will save the said parties of the first part, and each of them, harmless from all such assessments, charges or payments.

IN WITNESS WHEREOF and of all and singular the foregoing the said parties of the first part have hereto set their hands and seals, and the said party of the second part has caused its corporate seal to be hereto affixed and these presents to be signed in its name and behalf by Alvin F. Sortwell, its Mayor, hereto duly authorized, the day and year first above mentioned.

(Signed)

GEORGE G. CROCKER, }
EDWARD P. FISK, } *Trustees.*
MARY G. FISK.
EDWARD KENDALL.
GEORGE B. ROBERTS.
HORACE O. BRIGHT.
HENRY N. TILTON.
FREDERICK W. TILTON.
WM. H. WOOD.
HENRY N. TILTON,
Trustee under the will of Benj. R. Tilton.
CITY OF CAMBRIDGE,
By ALVIN F. SORTWELL, *Mayor.*

Agreement to restrict land and convey streets belonging to Charles River Embankment Company and others.

THIS AGREEMENT, made this seventh day of May, A. D. 1897, by and between the Charles River Embankment Company, a corporation organized under Chapter 211 of the Acts of Massachusetts passed in the year 1881, John Souther, Charles H. Souther, Oliver Ames, Samuel Carr, and Oliver W. Mink, the latter three as Trustees of the estate of Frederick L. Ames, deceased, and all in the Commonwealth of Massachusetts, the parties of the first part, and the City of Cambridge, a municipal corporation legally established in the County of Middlesex in said Commonwealth, party of the second part.

Witnesseth: That, whereas, the parties of the first part are the owners of certain lands, situated within the territorial limits of said Cambridge, on both sides of Massachusetts Avenue, bounded southerly and easterly by the Esplanade, so-called, westerly by land of City of Cambridge taken for a parkway and by land of Jennie G. Carter, northerly and westerly by the Boston & Albany Railroad, easterly and southerly by other land of said estate of said Frederick L. Ames, deceased, and of F. W. Rogers, Trustee, other land of Charles H. Souther and land of Harriett A. Porter, all as shown on a plan herewith to be filed, entitled "Plan Showing Location of Streets on Land of Charles River Embankment Company and Others, Cambridge, Mass.," Aspinwall & Lincoln, Surveyors, dated Nov. 15, 1895, and said boundaries marked in red ink on said plan, and

Whereas, the party of the second part proposes to extend the Esplanade as now constructed easterly to Main Street, so as to make one continuous parkway from Brookline Street, including said Esplanade running southerly and easterly to Main Street, and

Whereas, the said parties of the first part propose to improve yet more the territory included in the bounds first above described,

NOW THEREFORE be it hereby known that in consideration of the sum of one dollar to them paid by the party of the second part, the receipt whereof is hereby acknowledged, and of the covenants of the party of the second part hereinafter contained, the parties of the first part do hereby covenant for themselves, their respective heirs, successors, grantees, and assigns with the party of the second part as follows, namely:—

First — That they, the parties of the first part, will forthwith upon the execution of this agreement by proper instrument in writing free from all incumbrances and existing liens restrict their lands and will secure from said Harriett A. Porter a restriction upon her lands both

abutting upon said Esplanade or park, and to a distance of one hundred feet therefrom, substantially in conformity with the so-called Cambridge Park restrictions and such as have been hitherto imposed upon other lands abutting upon lands taken by the City of Cambridge for park purposes on said Charles River.

Second — That they, the parties of the first part, will by proper instruments in writing free from all incumbrances and existing liens, also forthwith so restrict their lands other than those included within the one hundred foot limit next before mentioned and within the boundaries in red ink first above described for a period of thirty years from January 1, 1898, as shall require said lands to be used for dwellings of the better class and mercantile purposes only, except that the lands bordering on the Boston & Albany Railroad may also be used for storage warehouses and stables, etc.

Third — That they, the parties of the first part, will forthwith convey to the City of Cambridge by proper deed free of all incumbrances and existing liens the fee of all streets included in and described on said plan now constructed, and all other streets that may be laid out and constructed within said territory by the parties of the first part or either of them, their respective heirs, grantees, successors and assigns, and that they will fill to grade with top dressing of gravel to the satisfaction of the City Engineer for the time being of said Cambridge, all streets now and hereafter laid out and constructed by them within said territory; and will make no claim for damage or compensation whatsoever against said City by reason of the laying out, construction and conveyance of any and all of said streets to said City, and the imposition of the above restrictions.

And the party of the second part in consideration of the above covenants of the parties of the first part doth hereby covenant with the parties of the first part and each of them, and their respective heirs, successors and assigns as follows, namely: —

First — That it, the party of the second part, will pay to the parties of the first part, their respective heirs, successors and assigns, in three consecutive years, commencing this current year, such sum of money as is and may be in excess of the annual taxes of the years 1896, 1897, 1898 and 1899, respectively assessed, and that may be in the future assessed in each of said four years (but first, however, deducting therefrom all abatements that may be made therein) upon the lands of the parties of the first part within the territory first above described and the territory east thereof, marked lots A, B, C, D, E, and F, enclosed in blue lines as shown on said plan (exclusive of buildings that may be erected thereon and exclusive of streets and avenues now laid out and

shown on said plan, and that may hereafter be laid out), and that may be collected in cash in each of said four years over and above the average rate of thirty cents per square foot on their lands east of Massachusetts Avenue included within said territory first above described; over and above the average rate of fifty cents per square foot on their lands west of Massachusetts Avenue as far as John Souther's land, included within said territory first above described, and over and above the average rate of ten cents per square foot on the lands of John Souther west of Massachusetts Avenue, and the lands of the Charles River Embankment Company west of said John Souther's, included within and as far as the westerly line of the territory first above described. Said payments shall be made annually, commencing the current year, except as hereinafter provided, upon the second Monday in December of each of the years 1897, 1898, and 1899 (or at any time thereafter upon demand); and for said excess of the taxes assessed for the year 1896 said payment shall be made at and when the taxes therefor are paid to said City of Cambridge by the party of the first part at the office of the Treasurer of the City of Cambridge, and all payments shall be made to the Treasurer of the said Embankment Company or to some other officer designated by said Company, whose receipt shall be taken as the receipt of all said parties of the first part and their successors, grantees, heirs and assigns.

Second — That the party of the second part will assume and pay all betterments assessed and that may be assessed upon the remainder of the land of the said parties of the first part adjoining said Esplanade by reason of the laying out and construction of said Esplanade adjoining their said land and of the extension of the Esplanade to Main Street.

Third — That whenever a building or buildings is or are erected abutting on any street so conveyed and are ready for occupancy, the said party of the second part will immediately, upon notice thereof in writing by the party of the first part, their successors and assigns, put said street in order for public travel within a reasonable time, from the said buildings to a public thoroughfare.

And the said parties of the first part hereby covenant severally for themselves and their respective heirs, successors, grantees and assigns, with the said party of the second part that they will respectively fully and faithfully perform the covenants aforesaid by them to be performed, for and in respect to their respective lots and interests in said lands within said territory first above described; and upon failure of any of the said parties of the first part to perform its, his, or their said covenant as aforesaid, the party of the second part shall have the right

to enforce specific performance thereof against any or all of the parties so failing to perform.

In case the parties of the first part fail and as long as they fail to restrict their land as above provided, then all payments shall stand in abeyance until both restrictions aforementioned shall have been procured by the parties of the first part and shall have been granted to the party of the second part.

IN WITNESS WHEREOF the parties hereunto affix their hands and seals to this instrument and to two others of like tenor the day and year first above written.

(Signed) CHARLES RIVER EMBANKMENT COMPANY,
By Samuel Carr, *Treasurer.*

JOHN SOUTHER.

CHARLES H. SOUTHER.

ESTATE OF FREDERICK L. AMES,

Oliver Ames,
Samuel Carr,
Oliver W. Mink,
} *Trustees.*

CITY OF CAMBRIDGE,
By Alvin F. Sortwell, *Mayor.*

On May 4th the following order was adopted by both branches of the City Council : —

In Board of Aldermen, May 4, 1897.

Ordered, That in addition to the amounts hitherto appropriated for park purposes in the annual order of appropriations for the current financial year, and in the order of appropriation dated March 30, 1897, and to further meet, if necessary, the estimated expenditures involved in the order of the proposed taking of lands of Fisk and others as per order introduced in this board under date of March 30, 1897, and involved in the agreement with said Fisk and others referred to in said last named order, the further sum of seventy-five thousand dollars ($75,000.00) be and hereby is appropriated, the same to be met from any revenue received into the City Treasury and not otherwise appropriated, or from loans for park purposes that may be hereafter authorized by statute.

Approved May 11, 1897.

On March 30, 1897, the following order was introduced into the City Council :

City of Cambridge,
In Board of Aldermen, March 30, 1897.

Whereas, By Chapter 341 of the Acts of the Legislature of the Commonwealth of Massachusetts for the year 1892, entitled "An Act to authorize the City of Cambridge to Lay Out and maintain Public Parks" and accepted by the City Council of the City of Cambridge, by a resolve approved June 15, 1892, and by Chapter 337 of the Acts of the Legislature for the year 1893, amendatory of said Chapter 341, it is provided that said City "by its City Council at any time after the passage of this Act may take and hold by purchase or otherwise, any and all such real estate and lands within said City as it may deem advisable, upon the recommendation of the Board of Park Commissioners hereinafter mentioned, and may lay out and maintain and improve the same as a public park or parks," and

Whereas, upon the recommendation of said Board of Park Commissioners dated February 23, 1897, and on file with the City Clerk, it is deemed advisable that the City should, under the provisions of the aforesaid Acts, take and hold for the purpose of improving the same as a public park or parks, the several lots or parcels of land hereinafter bounded and described;—

Provided, however, the Charles River Embankment Company will include in their deed to the city, certain restrictions as to building line, etc., the same as required by the Park Commissioners from other owners of property along the river park line, and also subject to the agreement to be made by a majority of the owners of the several parcels of land hereinafter bounded and described in the form annexed to said recommendation; and

Whereas, in a certain communication to the Mayor dated March 16, 1897, and to the City Solicitor dated March 26, 1897, from Henry D. Hyde, Esq., as attorney of and acting for the Charles River Embankment Company, the estate of Frederick L. Ames, Charles H. Souther and John Souther, and also in a certain other communication from Harriett A. Porter dated March 30, 1897 (copies of which communications accompany this order) and from conferences had with the representatives of the city since the date of said communications, said parties last named have agreed to subject their other lands for a distance of one hundred (100) feet from said Esplanade to certain restrictions in substance the same as has heretofore been imposed upon and assumed by other owners fronting upon the parkway on Charles River, and have further agreed to impose certain other restrictions for the period of thirty years from January 1, 1898, upon their other lands, as appears in said communications and a plan filed with this order, and have further

agreed to convey certain of said lands to said city, subject, however, to the agreements to be made and performed on the part of the City as therein stated, and

Whereas, it is thought that, in the execution of these agreements with these several owners hereinbefore named, a large and lasting development will accrue to the lands in that vicinity and a great and enduring benefit to the City in the improvement of that locality and in the large increase of taxable property therein, and

Whereas, "an appropriation sufficient to cover the estimated expense thereof" has been duly made by the City Council, as required by Section 3 of the aforesaid Chapter 337 of the Acts of the Legislature of 1893 —

NOW, THEREFORE, be it known, that by virtue and in pursuance of the authority conferred by said Acts of the Legislature, by all Acts amendatory thereof and supplementary thereto, and by every other power and authority it hereto enabling, the City of Cambridge by its City Council, does hereby take for the purpose aforesaid the following described lots or parcels of land, all situated within the limits of said City, to wit:—

Beginning at a point in the northerly pier and bulkhead line of Charles River at its intersection with the southerly line of Main Street, which point is about fifty-seven and five tenths (57.5) feet more or less southerly (measured on the pier and bulkhead line) from a tangent point in said line, said line being a curved line of nine hundred fifty-one and thirty-four hundredths (951.34) feet radius, and said tangent point being on the northeasterly side of West Boston Bridge, at its intersection with said pier and bulkhead line, being shown on a plan entitled "Boston Harbor, Mass., Map of Charles River from Brookline Street Bridge to its mouth, made under the direction of the United States Harbor Line Board of 1888," approved February 13, 1890, and signed by Redfield Proctor, Secretary of War, and on file in the office of the City Engineer of Cambridge, Mass.; thence running southwesterly along said pier and bulkhead line about two thousand four hundred twenty-six and five tenths (2,426.5) feet more or less to its intersection with the division line between land of the Cambridgeport Savings Bank and land of the Charles River Embankment Company; thence running northerly along said division line about two hundred and twenty-six (226) feet more or less to its intersection with a line parallel to and two hundred (200) feet distant northerly from said pier and bulkhead line; thence running northeasterly along said parallel line about two thousand eight-six and three tenths (2,086.3) feet to its intersection with the southerly line of Main Street; thence easterly along

said southerly line of Main Street about two hundred fifty-four (254) feet to its intersection with said pier and bulkhead line at the point of beginning. Containing about four hundred fifty-one thousand seven hundred and forty (451,740) square feet.

The above described parcel of land is shown on a plan entitled "Plan of Flats between Main Street and land of the Charles River Embankment Company, drawn by L. M. Hastings, City Engineer, dated March 9, 1896," and on file in the office of the City Engineer of Cambridge, Mass., to which reference may be had for a more particular description of said premises.

Said lands hereby taken are supposed to belong to the persons hereinafter named, to wit: —

A parcel of land supposed to belong to Bent, also to the West End Street Railway Company, bounded as follows, viz: —

Beginning at a point in the northerly pier and bulkhead line of Charles River at its intersection with the southerly line of Main Street, which point is about fifty-seven and five tenths (57.5) feet southwesterly (measured on the pier and bulkhead line) from a tangent point in said line, said line being a curved line of nine hundred fifty-one and thirty-four hundredths (951.34) feet radius and said tangent point being on the northeasterly side of West Boston Bridge at its intersection with the pier and bulkhead line, said pier and bulkhead line being shown on a plan entitled "Boston Harbor, Mass., Map of Charles River from Brookline Street Bridge to its mouth, made under the direction of the United States Harbor Line Board of 1888," approved February 13, 1890, and signed by Redfield Proctor, Secretary of War, and on file in the office of the City Engineer of Cambridge, Mass.; thence running southwesterly along said pier and bulkhead line about one hundred and twenty-two (122) feet to its intersection with the division line between land of Bent and land of the Heirs of Josiah Mason; thence northwesterly along said division line about two hundred sixteen and five-tenths (216.5) feet, to its intersection with a line parallel to and two hundred (200) feet distant northerly from the pier and bulkhead line above mentioned; thence northeasterly along said parallel line about twenty-nine and three tenths (29.3) feet to its intersection with the southerly line of Main Street; thence southeasterly along and bounding on said southerly line of Main Street, about two hundred and fifty-four (254) feet to its intersection with the pier and bulkhead line at the point of beginning. Containing about fifteen thousand one hundred and thirty (15,130) square feet.

A parcel of land supposed to belong to the Heirs of Josiah Mason, also to Benjamin F. Brown, bounded as follows, viz:—

Beginning at a point in the northerly pier and bulkhead line of Charles River at its intersection with the division line between land of the Heirs of Josiah Mason and land of Bent, which point is about one hundred seventy-nine and five tenths (179.5) feet (measured on the pier and bulkhead line) from a tangent point in said line, said line being a curved line of nine hundred fifty-one and fifty-four hundredths (951.54) feet radius, and said tangent point being on the northeasterly side of West Boston Bridge at its intersection with the pier and bulkhead line, said pier and bulkhead line being shown on a plan entitled, "Boston Harbor," etc., as aforementioned; thence running southwesterly along said pier and bulkhead line about one hundred and ninety-seven (197) feet, to its intersection with the division line between land of said Heirs of Josiah Mason and land of Heirs of William Fisk and Mary G. Fisk; thence northwesterly along said division line about two hundred thirty-six and five tenths (236.5) feet to its intersection with a line parallel to and two hundred (200) feet distant northerly from the pier and bulkhead line above mentioned; thence northeasterly along said parallel line about one hundred and ninety-five (195) feet to its intersection with the division line between land of the Heirs of Josiah Mason and land of Bent; thence southeasterly along said division line about two hundred sixteen and five tenths (216.5) feet to its intersection with the aforesaid pier and bulkhead line at the point of beginning. Containing about thirty-nine thousand and two hundred (39,200) square feet.

A parcel of land supposed to belong to the Heirs of William Fisk and Mary G. Fisk, bounded as follows, viz:—

Beginning at a point in the northerly pier and bulkhead line of Charles River at its intersection with the division line between land of the Heirs of William Fisk and Mary G. Fisk and land of the Heirs of Josiah Mason, which point is about three hundred seventy-six and five tenths (376.5) feet (measured on the pier and bulkhead line) from a tangent point in said line, said line being a curved line of nine hundred fifty-one and thirty-four hundredths (951.34) feet radius, and said tangent point being on the northwesterly side of West Boston Bridge at its intersection with the pier and bulkhead line, said pier and bulkhead line being shown on a plan entitled "Boston Harbor," etc., as aforementioned; thence running southwesterly along said pier and bulkhead line about eight hundred and forty (840) feet to its intersection with the division line between land of the Heirs of William Fisk and Mary G. Fisk and land of Edward Kendall; thence running northerly along said division line about two hundred and thirty-one (231) feet to its intersection with a line parallel to and two hundred (200) feet distant northerly from the pier and bulkhead line above mentioned;

thence northeasterly along said parallel line about five hundred and eighty-five (585) feet to its intersection with the division line between land of the Heirs of William Fisk and Mary G. Fisk and land of the Heirs of Josiah Mason; thence southeasterly along said division line about two hundred thirty-six and five tenths (236.5) feet to its intersection with the aforesaid pier and bulkhead line at the point of beginning. Containing about one hundred forty-two thousand six hundred and nineteen (142,619) square feet.

A parcel of land supposed to belong to Edward Kendall, bounded as follows, viz:—

Beginning at a point in the northerly pier and bulkhead line of Charles River at its intersection with the division line between land of Edward Kendall and land of Heirs of William Fisk and Mary G. Fisk, which point is about one thousand two hundred sixteen and five tenths (1,216.5) feet (measured on the pier and bulkhead line) from a tangent point in said line, said line being a curved line of nine hundred and fifty-one and thirty-four hundredths (951.34) feet radius, and said tangent point being on the northeasterly side of West Boston Bridge at its intersection with the pier and bulkhead line, said pier and bulkhead line being shown on a plan entitled, "Boston Harbor," etc, as aforementioned; thence running southwesterly along said pier and bulkhead line about one hundred and eighty-three (183) feet to its intersection with the division line between land of Edward Kendall and land of George B. Roberts; thence running northerly along said division line about two hundred and thirty-one (231) feet to its intersection with a line parallel to and two hundred (200) feet distant northerly from the pier and bulkhead line above mentioned; thence running northeasterly along said parallel line about one hundred and eighty-three (183) feet to its intersection with the division line between land of Edward Kendall and land of Heirs of William Fisk and Mary G. Fisk; thence running southerly along said division line about two hundred and thirty-one (231) feet to its intersection with the pier and bulkhead line at the point of beginning. Containing about thirty-six thousand five hundred and ninety-five (36,595) square feet.

A parcel of land supposed to belong to George B. Roberts, bounded as follows, viz:—

Beginning at a point in the northerly pier and bulkhead line of Charles River at its intersection with the division line between land of George B. Roberts and land of Edward Kendall, which point is about one thousand three hundred and ninety-nine and five tenths (1,399.5) feet (measured on the pier and bulkhead line) from a tangent point in said line, said line being a curved line of nine hundred and fifty-one

and thirty-four hundreths (951.34) feet radius, and said tangent point being on the northeasterly side of West Boston Bridge at its intersection with the pier and bulkhead line, said pier and bulkhead line being shown on a plan entitled, "Boston Harbor," etc., as aforementioned; thence running southwesterly along said pier and bulkhead line about ninety-one (91) feet to its intersection with the division line between land of George B. Roberts and land of Horace O. Bright; thence running northerly along said division line about two hundred and thirty-one (231) feet to its intersection with a line parallel to and two hundred (200) feet distant northerly from the pier and bulkhead line above mentioned; thence running northeasterly along said parallel line about ninety-one (91) feet to its intersection with the division line between land of George B. Roberts and land of Edward Kendall; thence running southerly along said division line about two hundred and thirty-one (231) feet to its intersection with the pier and bulkhead line at the point of beginning. Containing about eighteen thousand three hundred (18,300) square feet.

A parcel of land supposed to belong to Horace O. Bright, bounded as follows, viz:—

Beginning at a point in the northerly pier and bulkhead line of Charles River at its intersection with the division line between land of Horace O. Bright and land of George B. Roberts, which point is about one thousand four hundred ninety and five tenths (1,490.5) feet (measured on the pier and bulkhead line) from a tangent point in said line, said line being a curved line of nine hundred fifty-one and thirty-four hundredths (951.34) feet radius, and said tangent point being on the northeasterly side of West Boston Bridge at its intersection with the pier and bulkhead line, said pier and bulkhead line being shown on a plan entitled, "Boston Harbor," etc., as aforementioned; thence running southwesterly along said pier and bulkhead line about two hundred and seventy-five (275) feet to its intersection with the division line between land of Horace O. Bright and land of Heirs of William and James C. Fisk; thence running northerly along said division line about two hundred and thirty-one (231) feet to its intersection with a line parallel to and two hundred (200) feet distant northerly from the pier and bulkhead line above mentioned; thence running northeasterly along said parallel line about two hundred and seventy-five (275) feet to its intersection with the division line between land of Horace O. Bright and land of George B. Roberts; thence running southerly along said division line about two hundred and thirty-one (231) feet to its intersection with the pier and bulkhead line at the point of beginning. Containing about fifty-five thousand (55,000) square feet.

A parcel of land supposed to belong to the Heirs of William and James C. Fisk, bounded as follows, viz:—

Beginning at a point in the northerly pier and bulkhead line of Charles River at its intersection with the division line between land of Heirs of William and James C. Fisk and land of Horace O. Bright, which point is about one thousand seven hundred sixty-five and five tenths (1,765.5) feet (measured on the pier and bulkhead line) from a tangent point in said line, said line being a curved line of nine hundred fifty-one and thirty-four hundredths (951.34) feet radius, and said tangent point being on the northeasterly side of West Boston Bridge, at its intersection with the pier and bulkhead line, said pier and bulkhead line being shown on a plan entitled, "Boston Harbor," etc., as aforementioned; thence running southwesterly along said pier and bulkhead line about three hundred thirty-one and five tenths (331.5) feet to its intersection with the division line between land of Heirs of William and James C. Fisk and land of William H. Wood; thence running northerly along said division line about two hundred and thirty-one (231) feet to its intersection with a line parallel to and two hundred (200) feet distant northerly from the pier and bulkhead line above mentioned; thence running northeasterly along said parallel line about three hundred thirty-one and five tenths (331.5) feet, to its intersection with the division line between land of Heirs of William and James C. Fisk and land of Horace O. Bright; thence running southerly along said division line about two hundred and thirty-one (231) feet to its intersection with the pier and bulkhead line at the point of beginning. Containing about sixty-six thousand four hundred (66,400) square feet.

A parcel of land supposed to belong to William H. Wood, bounded as follows, viz:—

Beginning at a point in the northerly pier and bulkhead line of Charles River at its intersection with the division line between land of William H. Wood and land of Heirs of William and James C. Fisk, which point is about two thousand ninety-seven (2,097) feet (measured on the pier and bulkhead line) from a tangent point in said line, said line being a curved line of nine hundred fifty-one and thirty-four hundredths (951.34) feet radius, and said tangent point being on the northeasterly side of West Boston Bridge, at its intersection with the pier and bulkhead line, said pier and bulkhead line being shown on a plan entitled, "Boston Harbor," etc., as aforementioned; thence running southwesterly along said pier and bulkhead line about one hundred and thirty (130) feet to its intersection with the division line between land of William H. Wood and land of Heirs of Tilton and

Fisk; thence running northerly along said division line about two hundred and thirty-one (231) feet to its intersection with a line parallel to and two hundred (200) feet distant northerly from the pier and bulkhead line above mentioned; thence running northeasterly along said parallel line about one hundred and thirty (130) feet to its intersection with the division line between land of William H. Wood and land of Heirs of William and James C. Fisk; thence running southerly along said division line about two hundred and thirty-one (231) feet to its intersection with the pier and bulkhead line at the point of beginning. Containing about twenty-six thousand and forty-eight (26,048) square feet.

A parcel of land supposed to belong to the Heirs of Tilton and Fisk, bounded as follows, viz:—

Beginning at a point in the northerly pier and bulkhead line of Charles River at its intersection with the division line between land of Heirs of Tilton and Fisk and land of William H. Wood, which point is about two thousand two hundred and twenty-seven (2,227) feet (measured on the pier and bulkhead line) from a tangent point in said line, said line being a curved line of nine hundred fifty-one and thirty-four hundredths (951.34) feet radius, and said tangent point being on the northeasterly side of West Boston Bridge, at its intersection with the pier and bulkhead line, said pier and bulkhead line being shown on a plan entitled, "Boston Harbor," etc., as aforementioned; thence running southwesterly along said pier and bulkhead line about one hundred and fifty-one (151) feet to its intersection with the division line between land of Heirs of Tilton and Fisk and land of Frederick H. Rindge; thence running northerly along said division line about two hundred and thirty-one (231) feet to its intersection with a line parallel to and two hundred (200) feet distant northerly from the pier and bulkhead line above mentioned; thence running northeasterly along said parallel line about one hundred and fifty (150) feet to its intersection with the division line between land of Heirs of Tilton and Fisk and land of William H. Wood; thence running southerly along said division line about two hundred and thirty-one (231) feet to its intersection with the pier and bulkhead line at the point of beginning. Containing about thirty thousand and forty-seven (30,047) square feet.

A parcel of land supposed to belong to Frederick H. Rindge, bounded as follows, viz:—

Beginning at a point in the northerly pier and bulkhead line of Charles River at its intersection with the division line between land of Frederick H. Rindge and land of Heirs of Tilton and Fisk, which point is about two thousand three hundred and seventy-eight (2,378) feet

(measured on the pier and bulkhead line) from a tangent point in said line, said line being a curved line of nine hundred fifty-one and thirty-four hundredths (951.34) feet radius, and said tangent point being on the northeasterly side of West Boston Bridge, at its intersection with the pier and bulkhead line, said pier and bulkhead line being shown on a plan entitled, "Boston Harbor," etc., as aforementioned; thence running southwesterly along said pier and bulkhead line about seventeen (17) feet to its intersection with the division line between land of Frederick H. Rindge and land of Cambridgeport Savings Bank; thence running northerly along said division line about two hundred and thirty-one (231) feet to its intersection with a line parallel to and two hundred (200) feet distant northerly from the pier and bulkhead line above mentioned; thence running northeasterly along said parallel line about seventeen (17) feet to its intersection with the division line between land of Frederick H. Rindge and land of Heirs of Tilton and Fisk; thence running southerly along said division line about two hundred and thirty-one (231) feet, to its intersection with the pier and bulkhead line at the point of beginning. Containing about three thousand four hundred and sixty-seven (3,467) square feet.

A parcel of land supposed to belong to the Cambridgeport Saving Bank, bounded as follows, viz:—

Beginning at a point in the northerly pier and bulkhead line of Charles River at its intersection with the division line between land of Cambridgeport Saving Bank and land of Frederick H. Rindge, which point is about two thousand three hundred and ninety-five (2,395) feet (measured on the pier and bulkhead line) from a tangent point in said line, said line being a curved line of nine hundred fifty-one and thirty-four hundredths (951.34) feet radius, and said tangent point being on the northeasterly side of West Boston Bridge at its intersection with the pier and bulkhead line, said pier and bulkhead line being shown on a plan entitled, "Boston Harbor," etc., as aforementioned; thence running southwesterly along said pier and bulkhead line about eighty-nine (89) feet to its intersection with the division line between land of Cambridgeport Savings Bank and land of Charles River Embankment Company; thence running northerly along said division line about two hundred and twenty-six (226) feet to its intersection with a line parallel to and two hundred (200) feet distant northerly from the pier and bulkhead line above mentioned; thence running northeasterly along said parallel line about ninety-nine and five tenths (99.5) feet to its intersection with the dividing line between land of Cambridgeport Savings Bank and land of Frederick H. Rindge; thence running southerly along said division line about two hundred and thirty-one (231) feet to

its intersection with the pier and bulkhead line at the point of beginning. Containing about eighteen thousand nine hundred and thirty-five (18,935) square feet.

The above described parcels of land are shown on a plan entitled, "Plan of Flats between Main Street and land of the Charles River Embankment Company, drawn by L. M. Hastings, City Engineer, dated March 9, 1896," and on file in the office of the City Engineer of Cambridge, Mass., to which reference may be had for a more particular description of said premises.

SO, THEREFORE, be it known, that the several parcels of land hereinbefore mentioned and particularly described, on this 30th day of March, A. D. 1897, are hereby taken by the City of Cambridge, as aforesaid, for the purpose hereinbefore set forth, assessments for the cost and expenses thereof to be laid under the provisions of Sections 6 and 7 of said Chapter 341 of the Acts of 1892; and it is hereby

Ordered, in accordance with the requirements of Section 2 of said Chapter 341 of the Acts of the year 1892, hereinbefore mentioned, that the City Clerk be and hereby is directed to cause to be recorded in the Registry of Deeds of the Southern District of the County of Middlesex, a description of the aforesaid taking sufficiently accurate for identification, with a statement of the purpose for which the same was taken, which statement shall be signed by the Mayor.

Also, that the City Clerk be requested to send notice of this taking to the owners of record of the lands hereby taken, so far as the same may be known.

Adopted: Sent down for concurrence, April 13, 1897. Concurred, April 27, 1897. Approved, May 11, 1897.

To provide a better approach to Main Street from the Esplanade and upon recommendation of the Board of Park Commissioners, the following order was adopted by both branches of the City Council, July 27, 1897, and approved by the Mayor, July 29, 1897.

CITY OF CAMBRIDGE,
IN BOARD OF ALDERMEN, July 27, 1897.

Whereas, By Chapter 341 of the Acts of the Legislature of the Commonwealth of Massachusetts for the year 1892, entitled, "An Act to authorize the City of Cambridge to Lay Out and Maintain Public Parks," and accepted by the City Council of the City of Cambridge by a resolve approved June 15, 1892, and by Chapter 337 of the Acts of the Legislature for the year 1893, amendatory of said Chapter 341, it is

provided that said City "by its City Council at any time after the passage of this Act may take and hold by purchase or otherwise, any and all such real estate and lands within said City as it may deem advisable, upon the recommendation of the Board of Park Commissioners hereinafter mentioned, and may lay out and maintain and improve the same as a public park or parks — " and

Whereas, It is deemed advisable upon the recommendation of said Board of Park Commissioners that the City should, under the provisions of the aforesaid Acts, take and hold for the purpose of improving the same as a public park or parks, the several lots or parcels of land hereinafter bounded and described, and

Whereas, "An appropriation sufficient to cover the estimated expense thereof" has been duly made by the City Council, as required by Section 3 of the aforesaid Chapter 337 of the Acts of the Legislature of 1893,—

NOW, THEREFORE, be it known, That by virtue and in pursuance of the authority conferred by said Acts of the Legislature, and by every other power and authority it hereto enabling, the City of Cambridge, by its City Council, does hereby take for the purpose aforesaid the following described lots or parcels of land, all situated within the limits of said City, to wit: —

A parcel of land supposed to belong to Benjamin F. Brown, the same being bounded as follows, viz: —

Beginning at a point in the southerly line of Main Street at its intersection with the division line between land of Benjamin F. Brown and land of George H. Bent; thence easterly along said division line about sixty-two and sixty-three hundredths (62.63) feet to its intersection with the westerly line of Charles River Parkway; thence southerly along said parkway line about fifty-nine and eighty-nine hundredths (59.89) feet, said line being a curve of seven hundred and fifty-one and thirty-four hundredths (751.34) feet radius, to a point of compound curvature with a curve of thirty-five (35) feet radius; thence northerly and westerly along said curve of thirty-five (35) feet radius about eighty-five and ninety-six hundredths (85.96) feet to its point of tangency in said southerly line of Main Street; thence easterly along said southerly line of Main Street about eight and forty-seven hundredths (8.47) feet to its intersection with the division line between land of said Benjamin F. Brown and land of George H. Bent at the point of beginning. Containing about eight hundred and thirty-one (831) square feet.

A parcel of land supposed to belong to George H. Bent, the same being bounded as follows, viz; —

Beginning at a point in the southerly line of Main Street at its intersection with the division line between land of George H. Bent and land of Benjamin H. Brown; thence along said southerly line of Main Street about eighty and eighty-two hundredths (80.82) feet to its intersection with the westerly line of Charles River Parkway; thence southerly along said parkway line about twenty-nine and three tenths (29.3) feet, said line being a curve of seven hundred and fifty-one and thirty-four hundredths (751.34) feet radius, to its intersection with the division line between land of said George H. Bent and land of said Benjamin F. Brown; thence westerly along said division line about sixty-two and sixty-three hundredths (62.63) feet to its intersection with the southerly line of Main Street at the point of beginning. Containing about nine hundred and four (904) square feet.

The above described parcels of land are shown on a plan entitled, "Plan of Flats between Main Street and land of the Charles River Embankment Company," drawn by L. M. Hastings, City Engineer, dated March 9, 1896, and on file in the office of the City Engineer of Cambridge, Mass., a copy of which plan is to be recorded in the Middlesex South District Registry of Deeds, reference to which is hereby made for a more particular description of the lots taken.

SO, THEREFORE, be it known, that the several parcels of land, together with all the buildings and structures thereon, hereinbefore mentioned and particularly described, on this twenty-seventh day of July, A. D. 1897, are hereby taken by the City of Cambridge, as aforesaid, for the purpose hereinbefore set forth, assessments for the cost and expenses thereof to be laid under the provisions of Sections 6 and 7 of said Chapter 341 of the Acts of 1892; and it is hereby

ORDERED, That, in accordance with the requirements of Section 2 of said Chapter 341 of the Acts of 1892, hereinbefore mentioned, the City Clerk be and hereby is directed to cause to be recorded in the Registry of Deeds of the Southern District of the County of Middlesex, a description of the aforesaid taking sufficiently accurate for identification, with a statement of the purpose for which the same was taken, which statement shall be signed by the Mayor.

On May 11, 1897, the Board submitted the following report and recommendations:

CITY OF CAMBRIDGE,
BOARD OF PARK COMMISSIONERS, May 11, 1897.

To the Honorable, the City Council of the City of Cambridge:

Gentlemen:—The Board of Park Commissioners respectfully recommends to the City Council that the City take, under the authority

granted by Chapter 341 of the Acts of 1892, entitled "An Act to authorize the City of Cambridge to Lay Out and Maintain Public Parks," and Chapter 337 of the Acts of 1893, amendatory thereto, the parcel of land situated on the westerly side of Winthrop Square, described as follows:—

Beginning at a point in the southwesterly side of Mt. Auburn Street, at its intersection with the southeasterly side of an unknown street or passageway, said point being about 67.4 feet from the westerly line of Boylston Street, measured on the southwesterly line of Mt. Auburn Street; thence running southwesterly along said southeasterly side of said passageway about 132.7 feet to its intersection with the northeasterly line of Winthrop Street; thence about 20.3 feet to the intersection of the northwesterly side of said passageway with the northeasterly line of Winthrop Street; thence running northeasterly along said northwesterly side of said passageway about 135.0 feet, to its intersection with the southwesterly line of Mt. Auburn Street; thence southeasterly along the southwesterly line of Mt. Auburn Street about 20.0 feet to the point of beginning. Containing about 6,280 square feet.

The above described land is at present a private way running from Mt. Auburn Street to Winthrop Street, on the westerly side of Winthrop Square. The owners of the way are willing to convey it to the City without any expense and subject to no conditions or restrictions, except a right of way over the westerly portion of it four and one-half feet wide, in order to give access to the adjoining property.

If this taking is made, the Park Commissioners intend to include the land taken as a part of Winthrop Square, and thus increase its present limited area.

It seems to the Commission advisable that the way be taken, and such taking is therefore recommended.

Respectfully,

(Signed) WILLIAM M. RICHARDSON,
President pro tem.

The following order for taking the land recommended in above report was adopted by both branches of the City Council, and approved by the Mayor, June, 9, 1897 :

CITY OF CAMBRIDGE,
IN BOARD OF ALDERMEN, June 1, 1897.

Whereas, By Chapter 341 of the Acts of the Legislature of the Commonwealth of Massachusetts for the year 1892, entitled "An Act to Authorize the City of Cambridge to Lay Out and Maintain Public

Parks," and accepted by the City Council of the City of Cambridge, by a resolve approved June 15, 1892, and by Chapter 337 of the Acts of the Legislature for the year 1893, amendatory of said Chapter 341, it is provided that said City "by its City Council at any time after the passage of this Act may take and hold by purchase or otherwise, any and all such real estate and lands within said City as it may deem advisable, upon the recommendation of the Board of Park Commissioners hereinafter mentioned, and may lay out and maintain and improve the same as a public park or parks," and

Whereas, It is deemed advisable upon the recommendation of said Board of Park Commissioners that the City should, under the provisions of the aforesaid Acts, take and hold for the purpose of improving the same as a public park or parks, the several lots or parcels of land hereinafter bounded and described, and

Whereas, "An appropriation sufficient to cover the estimated expense thereof" has been duly made by the City Council, as required by Section 3, of the aforesaid Chapter 337, of the Acts of the Legislature of 1893,

NOW, THEREFORE, be it known, that by virtue and in pursuance of the authority conferred by said Acts of the Legislature, and by every other power and authority it hereto enabling, the City of Cambridge, by its City Council, does hereby take for the purpose aforesaid the following described lots or parcels of land, all situated within the limits of said City, to wit:—

The parcel of land situated on the westerly side of Winthrop Square, described as follows:—

Beginning at a point in the southwesterly side of Mt. Auburn Street at its intersection with the southeasterly side of an unknown street or passageway, said point being about sixty-seven and four tenths(67.4 feet from the westerly line of Boylston Street, measured on the southwesterly line of Mt. Auburn Street; thence running southwesterly along said southeasterly side of said passageway, about one hundred and thirty-two and seven tenths (132.7) feet to its intersection with the northeasterly line of Winthrop Street; thence about twenty and three tenths (20.3) feet to the intersection of the northwesterly side of said passageway with the northeasterly line of Winthrop Street; thence running northeasterly along said northwesterly side of said passageway, about one hundred and thirty-five (135) feet to its intersection with the southwesterly line of Mt. Auburn Street; thence southeasterly along the southwesterly line of Mt. Auburn Street, about twenty (20) feet to the point of beginning. Containing about six thousand two hundred and eighty (6,280) square feet.

The foregoing described land is shown upon a plan entitled "Plan of Winthrop Square," drawn by Lewis M. Hastings, City Engineer, dated February 1, 1897, and on file in the office of said City Engineer, Cambridge, Mass., a copy of which plan is to be recorded in the Middlesex South District Registry of Deeds, reference to which is hereby made for a more particular description of the lots taken, and are supposed to belong to the persons hereinafter named, to wit:—

A parcel of land supposed to belong to the Heirs of E. A. Chapman, bounded as follows:—

Beginning at a point in the southwesterly line of Mt. Auburn Street at its intersection with the northwesterly line of an unnamed street or passageway, said passageway being adjacent to and northwest of Winthrop Square, and running southwesterly along the northwesterly line of said passageway, about seventy (70) feet to its intersection with the dividing line between the land of Heirs of E. A. Chapman and land of the Pi Eta Associates; thence running southeasterly on said division line extended about ten (10) feet to its intersection with the centre line of said passageway; thence running northeasterly along said centre line, about seventy and eight tenths (70.8) feet to its intersection with the southwesterly line of Mt. Auburn Street; thence running northwesterly along said southwesterly line of Mt. Auburn Street, about ten (10) feet to its intersection with the northwesterly line of said passageway at the point of beginning. Containing about seven hundred and four (704) square feet.

A parcel of land supposed to belong to the Pi Eta Associates, bounded as follows:—

Beginning at a point in the northwesterly line of an unnamed street or passageway, said passageway being adjacent to and northwest of Winthrop Square, and said point being about seventy (70) feet distant, measured on the northwesterly line of said passageway, from the southwesterly line of Mt. Auburn Street; thence running southwesterly along the northwesterly line of said passageway, about sixty-five (65) feet to its intersection with the northeasterly line of Winthrop Street; thence running southeasterly along the northeasterly line of Winthrop Street extended about ten (10) feet to its intersection with the centre line of said passageway; thence running northeasterly along said centre line, about sixty-five (65) feet to its intersection with the above-mentioned division line extended between the land of the Pi Eta Associates and the land of the Heirs of E. A. Chapman; thence running northwesterly along said division line extended about ten (10) feet to its intersection with the northwesterly line of said passageway at the point of beginning. Containing about six hundred and fifty (650) square feet.

SO, THEREFORE, be it known that the several parcels of land, hereinbefore mentioned and particularly described, are hereby taken by the City of Cambridge, as aforesaid, for the purpose hereinbefore set forth, assessments for the cost and expenses thereof to be laid under the provisions of Sections 6 and 7 of said Chapter 341 of the Acts of 1892; and it is hereby

Ordered, That in accordance with the requirements of Section 2 of said Chapter 341 of the Acts of the year 1892, hereinbefore mentioned, the City Clerk be and hereby is directed to cause to be recorded, in the Registry of Deeds of the Southern District of the County of Middlesex, a description of the aforesaid taking sufficiently accurate for identification, with a statement of the purpose for which the same were taken, which statement shall be signed by the Mayor.

In accordance with the written request of the Park Commissioners, the following order was adopted:

IN BOARD OF ALDERMEN, Sept. 7, 1897.

Whereas, The owners of a majority of the frontage of lands abutting on Bath Street have given their consent in writing to a request of the Board of Park Commissioners that Bath Street be placed under the control of said Board,—it is

Ordered, Under the provisions of Chapter 300 of the Legislative Acts of this Commonwealth for the year 1893, that said Bath Street be and hereby is placed under the control of the Board of Park Commissioners of the City of Cambridge.

Concurred, September 7, 1897.

Approved, September 9, 1897.

The Park Commissioners have endeavored to carry out a system of park development that should be commensurate with a city of the position and wealth of Cambridge. The first need, a playground,—a breathing space in the congested district, — has been attended to. Cambridge field is completed, and its cost of thirty-five cents per square foot does not give opportunity to any taxpayer to complain justly of extravagance in caring for the people.

The Rindge Field property now belongs to the city, and when the district in its vicinity becomes thickly populated, and the Field is needed for park purposes, it will be the duty of the Park Commissioners to see that it is completed as a park. Until that time it is

manifestly unwise to spend a large amount in construction, to be followed by a large annual expense for maintenance, an expense that must come out of the annual tax levy.

The constructive work of the Commissioners, therefore, has been during the past year confined to the river, and no one will gainsay the fact that it was time something was done there; it has been left already too many years.

Until within a few years we have had no approach to Cambridge but what was unattractive, to say the least, and the city has suffered from it. The banks of the river were vile in the extreme and abandoned to desolation. A new era has been inaugurated, not entirely by the Park Commissioners, but by the people themselves, who have at last realized that the Charles River has a priceless value if properly cared for, and that the adornment of its shores is practically the adornment of the whole front yard of our city.

In accordance with this view, the Commissioners recommended the taking of the river lands, and their recommendation was unanimously adopted by the City Government. They have proceeded carefully in the development of these takings, having the fixed purpose of proceeding with the development of any given section of the river only to the extent that such improvement would, in their judgment, increase the value of abutting properties to an amount sufficient to pay interest charges and sinking fund requirements.

At the foot of Boylston Street, which was recently widened by the city, a condition of things existed that seemed to warrant immediate improvement by the Park Commissioners. The approach to the city from this point is but about two thousand feet from Harvard Square, and is the natural connection between the sections lying south of the river with Old Cambridge, North Cambridge, Arlington, Belmont and Lexington. The river bank at this point was filthy beyond expression, and was covered by houses totally unfit for human habitation.

The task of improvement was so great that the Commissioners hesitated in taking hold of it. The cleaning of the Augean Stables seemed child's play, compared with what was needed at this point. A beginning, however, was made and the improvement of the shore

since carried the full distance up the river to the Cambridge Hospital.

A beach constructed of clear river gravel now extends the entire length. A driveway from Boylston Street to Bath Street has been built and is now ready for use. Walks and lawns have been constructed and trees and shrubs planted, and only finishing touches are needed to complete the whole section. The "down on the marsh" of Old Cambridge is a thing of the past.

At the foot of Bath Street a boat landing will be built. This is necessary, as there is no doubt whatever that the river will, within the next few years, be extensively used by electric launches for pleasure and for travel between Cambridge and Boston.

The Commissioners deemed it quite desirable to construct the beach from Boylston Street as far as the coal wharf now occupied by Richardson & Bacon. The gravel was obtained from the river and placed upon the shore and levelled at a very low cost. The loam spaces will be laid out and trees will be planted in the early spring.

The boat house occupied by the Weld Boat Club has been altered and architecturally is much improved. This alteration was necessary because the ell projected into the driveway. Since the completion of the Metropolitan sewers, boating on the river has increased rapidly, — a sport not unwise to foster to a reasonable extent.

The results obtained from this river work may be summed up as follows: —

1st. The general improvement in appearance, — the making beautiful that which was disgraceful and abominable.

2nd. The cleaning out of unwholesome and undesirable hovels, a constant menace not only to the health of those who lived in them, but through the conveyance of disease germs to the children in our schools.

3rd. The increase in values of abutting property, in some cases more than four hundred per cent. The filling of marshes and bog holes, a work that never would have been done by private capital. The erection of new and expensive buildings, and laying out of new streets, thus changing this former picture of desolation into one of beauty and usefulness.

4th. The effect it has had upon the State Commission, resulting in a plan to lay out the huge Lowell and Longfellow marshes, so that the Boston shore will correspond to that of Cambridge. The Metropolitan Commissioners have made the taking, and will begin at once the building of the shore drive, the dykes and the speedway, to be followed by other improvements.

The next step to be taken by them is the building of a bridge to Gerry's Landing to connect with the wide boulevard from Gerry's Landing to Mt. Auburn Street, taken by the Metropolitan Commissioners this summer, thence to Fresh Pond, and later by a boulevard from the pond to the Fells by the way of the new Mystic Parkway.

Cambridge has suffered in the past from unwise conservatism. Public improvements were made for public necessity only, and no effort made to attract strangers and induce them to take residence here. To one unacquainted with New England life this would seem like culpable neglect.

A city well located on the sunny bank of a beautiful river, with wide, well-shaded streets, non-partisan government, freedom from saloons; the seat of the greatest university in the country, the one-time home of Longfellow, Holmes and Lowell; surrounded by higtorical associations—should be the ideal spot in which to build a home and educate one's children.

The many advantages possessed by Cambridge have been ably presented by public speeches and by the local press, but appearances go further than fair words, and to attain the position to which the city is entitled it has now become necessary to take up the work of its adornment.

This duty has fallen upon the Park Commissioners, and in working out the problem they have been studying to treat the city as a whole rather than from the standpoint of ward lines or localities. At the same time they have had to bear constantly in mind the fact that wise conservatism is necessary and that it is advisable to proceed slowly, so that the work may not be a burden upon the City.

The plans for next year contemplate the completion of the wall and filling back of the same, between West Boston Bridge and wall of the Charles River Embankment Company, completing the

Esplanade for a distance of one thousand feet each side of Harvard Bridge, building a gravel playground at Captain's Island to provide for the needs of the children of Ward IV, and the finishing touches to the river driveway above Boylston Street. It is quite probable that it may be necessary to connect Commercial Avenue with Bridge Street.

The Commissioners have many reasons for thanking the City Council and the citizens for continued courtesies and kind words of encouragement in their work. They have endeavored to perform their duties conscientiously, not forgetting that they are servants of the people to whom they are responsible.

Park Construction.

River Parkway.

The River Parkway from Boylston Street to the Cambridge Hospital is practically completed. Some finishing work remains to be done, but nothing involving large expense. The total cost of this parkway to date, including therein the cost of acquisition, is $176,224.58. This is a large outlay. A pertinent inquiry is, What has the city gained from it? Does it pay? Will it pay?

So much has been written in late years as to the value of parks and their effect upon a people, that any extended answer to these inquiries may be considered a needless repetition of well-known facts. But the questions are even now so often asked that it may be well to give a brief answer.

Park construction, whether in the midst of a crowded population, as at Cambridge Field, or upon the banks of a tidal stream of the character of the Charles, adds to the health and content, the moral, intellectual and artistic development of the people directly and indirectly affected by its proximity or use; it adds to the value of surrounding property; it attracts visitors and residents; it promotes facilities for use of the water way, and gives pleasure in such use.

Slight reflection will lead one to perceive the truth of these statements. One has but to remember the condition of the banks

of the river and its adjacent marshes before the work of construction was begun, to realize that the present conditions must be more conducive to health, must contribute to a larger content in the measure that a pleasant environment produces a keener pleasure and happiness than an unsightly one, must by the mere raising of the artistic standard develop a love and desire for the beautiful, and the aggregation of them all must tend towards the elevation of the moral nature. That such work attracts strangers, increases the fame and reputation of the city, and renders the city more desirable for residential purposes, is beyond question.

Such work must react upon the people to their advantage, and to the benefit of the city. All these results are not seen in a day, but will be plainly visible in the generation to come. Others have built for us; why not we for posterity?

But one may say, "The cost is too much. Posterity can take care of itself; we need our money for our own immediate wants."

At the best, this is a selfish view to take and, further, is assumed without any knowledge of the facts. The cost is large in the aggregate, but very small when applied per capita or as a proportional part of the tax rate.

The cost of the River Parkway between Boylston Street and the Hospital, including lands and construction, amounts to $176,224.58. Adding to this the estimated cost of finishing it of $6,350.00, brings the total cost up to $182,574.58. This amount has been paid for out of the proceeds of four per cent forty-year bonds issued by the city, the interest thereon amounting to $7,303. Adding thereto the estimated cost of maintenance of $2,600, makes the total yearly charge of about $10,000. Based upon the 1895 census of the city, showing a population of 81,643, the yearly cost per capita is about $12\frac{1}{2}$ cents, or about $11\frac{1}{2}$ cents of the tax rate of $17.50. Is not the cost of such work trifling as compared with its benefits?

But this cost will be immediately lessened by the increase in values in surrounding property. The Assessors' books show that before the land along the river was taken for park purposes the adjacent land's assessed valuation was $58,875.

The value of the adjacent land in 1897 was $108,900.00, showing an increased value of $50,025.00.

It may be said to those who suggest that valuations as shown on the Assessors' books do not necessarily represent the market values of property, that a comparison of the present and past appearance of the river bank must convince one of an actual increase in market value of the adjacent property, and an inevitable future increase. So, too, property generally in the vicinity of the river, although not adjacent thereto, must be affected in value by reason that the park work furnishes pleasanter approaches and surroundings to such property, and adds a point of interest within easy access.

The Commissioners feel that the river work is an object lessons; that it represents what will be the appearance of both sides of the river; that its action in development of this section of the river has done more than years of argument would do towards the determination of the Metropolitan Park Commissioners to begin work on the other side of the river. Public sentiment would have crystallized and compelled them to do so if they had not already decided upon that course. The result will be one of the most beautiful water ways in this country.

But one thing remains to be done to insure a perfect water way; the damming of the river, and the consequent uniform height of water, is essential to produce the best results. Probably some action will be taken this winter by the various boards and commissions interested in the river, tending towards a settlement of the project.

The Commissioners are proposing to enter into some arrangement with the Trustees of the Cambridge Hospital, by virtue of which the present park beach will be extended along the shore of the Hospital grounds with a path for foot travel, thus giving a direct connection from Gerry's Landing by the riverway to Boylston Street.

The Esplanade.

As appears earlier in this report, the Commissioners recommended to the City Council that the Esplanade be extended to West Boston Bridge.

The majority of owners of the flats agreed to relinquish to the city, free from any claims for damages, a strip two hundred feet wide, extending from the Charles River Embankment Company wall to West Boston Bridge, a distance of 2,500 feet, and to give the material for filling the same. In consideration therefor the city agreed to build a retaining wall and to fill this strip to street grade, at the same time that the owners should fill the remaining flats, and to exempt the owners from any increase in taxation on these lands for a period of ten years from the time the filling is completed. If, however, any of these flats should be sold during the period of ten years, then the same will be assessed and taxed at their full value.

The benefits to the city from this transaction will be as follows :

A continuous parkway between West Boston and Harvard Bridges.

Restrictions upon all abutting property.

The filling of a large area of flats which at low tide are offensive and unsightly.

The creation of a large amount of taxable property to the city, which otherwise would remain valueless.

The added attractiveness to the water front of the city.

The benefits to the owners are entirely of a financial nature, in which the city must share; the relief from increased taxation for ten years should not be considered as an act of very great generosity on the part of the city, for if this improvement had not been made the flats would have remained for many years valueless alike to the owners and to the city.

In May of this year, a contract was entered into with Thomas A. Rowe & Company to construct about 2,500 feet of sea wall on or before January 1, 1898, for the sum of $24.85 per foot. The work has progressed steadily and satisfactorily and there is no doubt that the wall will be completed so as to begin filling back of the same at the time named in the contract.

This new territory, together with that created by the Charles River Embankment Company adds to Cambridge an area larger than the Back Bay of Boston comprised within Massachusetts

Avenue and Arlington Street, Beacon and Boylston Streets. The Embankment Company has expended a large sum of money in its undertaking, and in the development of which every proper encouragement should be given to it. The Esplanade and streets have been deeded to the city and the developing and improving of the former is a work that the Commissioners feel should not be delayed.

This work will serve the double purpose of making attractive the Harvard Bridge approach to the city and adding value to the Esplanade and offering an inducement to build.

Cambridge Field.

The Cambridge Field Shelter was opened to the public, May 22, 1897, and has since been in daily use. The Field is now a completed park, and the extent to which it has been used during the past summer is an object lesson in municipal life and a sufficient answer to those critics who state that parks are unnecessary.

The increase in real estate values to the immediate neighborhood of the Field is shown by the following figures :

	Value of Land.	Value of Buil	Total Value.	Gain.
1893	$403,100	$533,000	$936,100	
1896	442,000	650,000	1,092,000	$155,900
1897	475,400	1,051,800	1,527,200	435,200

Rindge Field.

Little work has been done on Rindge Field. It has been the intention of the Board to use it in its present condition for a playground until such time as it was deemed wise to treat it in accordance with plans submitted by the landscape architects.

It has been claimed by many citizens living in the vicinity of the Field that it has been made a nuisance on account of the lack of proper police protection. During the summer an officer has been on duty Saturday afternoons and Sundays, but it is evident

that continuous police service is required, and this will be given to it next season.

East Cambridge Embankment.

The work of filling the river reservation has progressed throughout the year. A large amount of material from cellars in Boston and from the subway has been deposited there at a very low cost to the city. Commercial Avenue is now being filled and will be completed to the canal by the time the extension of Prison Point Street to the canal is made.

Winthrop Square.

This long-time neglected square has been entirely rebuilt and is now an attractive and useful addition to Boylston Street.

Public Grounds.

A new design for re-treatment of the grounds around the Public Library, High and Latin Schools and Manual Training School has been made. A portion of the constructive work will be completed each year.

Dana Square and Broadway Common were entirely rebuilt last year, and nothing has been done to them this year beyond the care given by the gardeners.

Hastings Square will be improved another season by pruning and cutting out surplus trees and replanting shrubs.

The Common is in good condition, and it is not the purpose of the Commissioners to make any material changes there at present.

Schoolhouse Grounds.

This year the Commissioners have made a beginning in the work of improving and adorning the schoolhouse grounds. The Webster school yard has been materially changed by substituting lawns, planting spaces and flower beds for brick pavements.

The Wellington and Boardman schools have likewise received attention. It is the purpose to treat all the school yards in the city in a similar manner.

Shade Trees.

Since the passage of the statute of 1897 placing the control of shade trees in the hands of the Park Commissioners, this Board has acted upon a large number of applications for removal of trees. In addition it has done considerable work in planting shade trees on streets where the same were needed. Its aim has been to remove such trees as were an injury to property or which interfered with the growth of other trees, as well as to plant them where it seemed desirable. The work is necessarily slow, as one will realize when it is understood that the work embraces over one hundred miles of streets. It is found that on many streets the trees are too closely planted to produce the best results, while on many there are too few or none at all. This work will be carried on during the coming year as the money at the disposal of the Board will permit.

Considerable pruning and trimming has been done during the year, and much more remains to be done.

Wire guards have been placed around a large number of trees and furnish a suitable protection from the gnawing of horses.

It is manifestly impossible to place the guards upon all trees for a long time to come, and therefore the Board asks the co-operation of the citizens to prevent further injury to trees by horses.

The Proposed Dam.

Under authority given them by Chapter 475 of the Acts of 1893, the State Board of Health and the Metropolitan Park Commission, acting as a joint board, began an investigation of the river and its condition. They made personal examinations of the stream and its banks at many times, employed experts, and submitted their report the following year. In this report they stated: "The position of the Charles River, in its relation to the Metropolitan District, has necessarily a very great influence upon the health and comfort of the people living in its vicinity."

* * * * * * * * *

"The river runs through the very centre of the Metropolis and upon its shores should naturally be placed the most attractive structures, its monuments and its finest dwellings."

* * * * * * * * *

"The banks of the river and the exposed flats have become from year to year more offensive until, in certain portions of the river, the people living near the stream have been exposed to the disagreeable and probably injurious emanations therefrom."

As a result of their investigations and study, they recommended building a dam at a point about six hundred feet above Craigie's Bridge, where the river is not more than 1,100 feet wide, the dam to have a lock of sufficient width to allow the passage of the largest vessels, and the water in the basin above the dam to be retained at a permanent level at grade eight, or two feet below mean high tide.

By Chapter 85 of the Resolves of 1894, the Board of Harbor and Land Commissioners was directed to inquire into the construction of a dam and lock in the tidal basin of the Charles River, as proposed by the joint board, "with special reference to interference with tide water and its effect upon the harbor of Boston."

Hearings before the Board were begun in the State House in October, 1894, and continued for several weeks. The solicitors of Newton, Cambridge and Watertown appeared in support of the report of the joint board, and Hon. John D. Long, Hon. William E. Russell and John T. Wheelwright, Esq., appeared in behalf of certain residents of Beacon Street, who objected to filling the river in the rear of their residences, and opposed the plan.

The opinion of the Harbor and Land Commissioners on the sanitary side of the question at issue is stated in their report to the Legislature, as follows :—

"This Board has given the highest degree of weight to the opinion of the State Board of Health, relying upon its great experience in dealing with the questions involved in this inquiry, combined with its accumulated advantages and facilities in considering matters with which it is entirely familiar, and concerning which it has the traditions, history and data of a quarter of a century of investigation; and in the light of that opinion it is unable to say, in view of the irreconcilable testimony of experts given at the hearings, that the conclusion of the joint board may not justify the experiment so far as sanitary objections are concerned."

Dealing with the question of "special reference to interference with tide water and its effect upon the harbor of Boston," a large mass of contradictory testimony was offered. From it all the Harbor and Land Commissioners sifted enough to make this report: "We are unable to find the consequences of building the proposed dam as at all certain of being foreseen; and in view of the incalculable injury which might ensue from impairing the usefulness of the harbor, we are unable to report in favor of the recommendation contained in the report of the joint board."

It is apparent that the Commissioners did not attempt to pass upon the merits of the question before them. Their decision was like the Scotch verdict of "not proven," and left the whole question open as before. During the three years which have elapsed since their decision was rendered, additional evidence in favor of the damming of the river has been acquired, which, together with what is believed to be the popular and well nigh universal demand for the dam, it is believed will justify a reopening of the whole subject.

This Board is of the opinion that the most feasible location of a dam is at St. Mary's Street. A dam at this point, owing to the narrowness of the river, would be very much less expensive than at any point below, while it would also obviate the objections of a diminution of the tidal scour, even assuming that there is such a thing as tidal scour. This location would also remove the objections of the residents of Beacon Street, who fear the filling in on the water side of their houses, which was a part of the original scheme, and would also remove the objection which is believed by those best qualified to judge, to be fanciful, of the presence of a standing body of water.

Considering the question of a dam from the point of the municipality, it is not Cambridge alone, but Boston, Newton, Watertown and other cities along the valley of the Charles that are interested directly and indirectly.

With a dam and proper lock, navigation of the river will be permissible at any state of the tide, and with a slight deepening of the channel the needs of the coal interests will be completely cared for.

With a dam, there will no longer be the mass of filthy refuse daily floated up the river from the inner harbor, and there will be something better to gaze upon than offal, barrels, chips and sea-weeds.

It was stated by one of the remonstrants at the hearing before the Harbor and Land Commissioners that good and sufficient sea walls on both sides of the river from Cottage Farm to Watertown could be built for $563,199. A wall based upon actual figures for wall construction would cost not less than $1,320,000. To this sum must be added the cost of filling marshes, creeks and low lands, which would cost as much more.

With a sea wall constructed on both sides to Watertown, the river would closely resemble a trunk sewer, and at low tide those who were so unfortunate as to be out in boats would truly be "out of sight of land."

With a sea wall there would be a stiff, unnatural, ugly effect; without a sea wall, and with the water at a permanent level, there would be natural banks with shrubbery growing to the water's edge.

The River Thames is said to be the most beautiful water park in the world. It is about two hundred miles from its source to the sea; for about sixty miles it is a highway for commerce and the balance distinctly a river of pleasure. Every few miles are public inns and boat houses which give facilities for boating to many thousands of people.

The Charles has two things in common with the Thames, — a diversified country and charming bits of scenery, — and if given to the people, it would be used for pleasure purposes from the dam to its source.

The time will come, and should come, when the hideous pile bridges with their ugly draws will be abandoned, and in their place will be constructed arched stone bridges of proper architectural design; then, masted navigation must cease, and the commercial interests, which will always be small, can be served by barges and scows. This change will work no hardship upon any commercial business on the river.

The various improvements of the river will be made by the State and by local commissions, but the control of the river should be

placed in the hands of a State River Commission, and sufficient power given to it to prevent private and selfish interests from interfering with public good. Such a commission modelled after the Thames Conservancy would give to the public the use of the river and at the same time give proper observance to legitimate private rights.

It is not proper that the river be given entirely to pleasure, but it is quite proper the public be given all the pleasure which the river is capable of furnishing. Its commercial interests are so small that they scarcely enter into the discussion, yet such as exist at present, or will be likely to exist in the future, can easily be provided for. Give such a commission absolute control and the river will be to the people a possession of great value.

Financial Statement.

During the year bills have been approved by the Board and certified to the Auditor to the total amount of $171,483.90.

This amount is divided as follows:—

Park lands and construction	$159,484 20
Park maintenance	11,999 70
	$171,483 90

These two amounts were expended as follows:—

Park Loan.

Amount appropriated April 8, 1897	$82,246 19
Amount appropriated May 11, 1897	125,000 00
	$207,246 19

EXPENDED.

River Parkway, Section G.		
Construction account	$57,825 22	$57,825 22
River Parkway, Section A, Esplanade Extension. Construction account	54,086 16	54,086 16
River Parkway, Section F.		
Land account	2,000 00	
Construction account	9,961 07	
		11,961 07
River Parkway, Section D.		
Land account	11,079 22	11,079 22
Amount carried forward		$134,951 67

Amount brought forward		$134,951 67
Cambridge Field.		
Construction account	7,671 31	7,671 31
East Cambridge Embankment.		
Construction account	7,671 26	7,671 26
General Accounts.		
Construction account	4,239 97	4,239 97
Winthrop Square.		
Construction account	1,752 87	1,752 87
Office Expenses.		
Construction account	1,734 23	1,734 23
River Parkway, Seetion C.		
Land account	$750 00	$750 00
River Parkway, Section B, Esplanade.		
Construction account	332 30	332 30
Rindge Field.		
Construction account	243 00	243 00
Nursery.		
Construction account	137 59	137 59
Total amount expended		$159,484 20
Balance of appropriation unexpended		47,761 99

From the above it will be seen that the amount expended during the year under the Park Loans was divided as follows :—

Land account	$13,829 22
Construction account	145,654 98
Total	$159,484 20

Park Maintenance.

Amount of appropriation April 8, 1897		$12,000 00
EXPENDED.		
Commons and squares	$5,093 89	
Shade trees	3,535 33	
The Shelter	1,431 10	
Rindge Field	784 51	
Public grounds	705 45	
General accounts	352 79	
Broadway Park	52 13	
Cambridge Field	44 50	
Total amount expended		11,999 70
Balance of appropriation unexpended		30

A detailed classification of the expenditures will be found in the report of the General Superintendent.

Since the beginning of the work in 1893, there has been expended to date of money raised under park loans the sum of $817,426.26. The division is as follows: —

River Parkway:—		
Section A. Esplanade Extension.		
Land account	$64 35	
Construction account	54,021 81	
		$54,086 16
Section B. Esplanade.		
Construction account	$332.30	332 30
Section C. Esplanade Extension West to Brookline Street.		
Land account	$1,413 55	1,413 55
Section D. Brookline to River Street.		
Land account	$94,922 25	
Construction account	3,766 09	
		98,688 34
Section E. River Street to Western Avenue.		
Land account	$25 00	25 00
Section F. Western Avenue to Boylston Street.		
Land account	65,412 07	
Construction account	15,510 08	
		80,922 15
Section G. Boylston Street to Cambridge Hospital.		
Land Account	$80,651 08	
Construction account	95,573 50	
		176,224 58
Cambridge Field:—		
Land account	$78,884 85	
Construction account	123,519 46	
		202,404 31
East Cambridge Embankment — "The Front":—		
Land account	$45,231 40	
Construction account	84,925 51	
		130,156 91
Broadway Park:—		
Construction account	$11,308 65	11,308 65
Amount carried forward		$755,561 95

Amount brought forward		$755,561 95
Rindge Field:—		
Land account	$31,461 85	
Construction account	4,003 15	
		35,465 00
Nursery:—		
Construction account	$2,444 37	2,444 37
Winthrop Square:—		
Construction account	$1,752 87	1,752 87
Office expenses:—		
Construction account	$6,226 12	6,226 12
General Account:—		
Construction account	$20,470 34	20,470 34
		$821,920 65
Less Park revenue for 1894 and 1896 merged into land and construction accounts . .		4,494.39
		$817,426 26

Of the whole amount of park loans expended to December 1, 1897, 48 per cent has been for land and 52 per cent for construction, as follows:—

Land account (less "revenues")	$393,572 01
Construction account	423,854 25
	$817,426 26

Cambridge met with a distinct loss in the retirement of Henry D. Yerxa from this Board. Loyal, earnest, untiring in his work, he gave to the city the same abilities that have made his business life a success, and for this work not only the present but future generations will hold him in grateful remembrance.

The Commissioners hope that the City Government will make such appropriations during the coming year as may be necessary to carry along the future work within the conservative lines outlined in this report, and will give the same cordial support that has been accorded to them in the past.

Respectfully submitted,

GEO. HOWLAND COX,
JOHN O'BRIEN,
WILLIAM M. RICHARDSON,
Board of Park Commissioners.

REPORT OF GENERAL SUPERINTENDENT OF PARKS

CAMBRIDGE, December 1, 1897.

To the Board of Park Commissioners of the City of Cambridge:—

GENTLEMEN: I have the honor to present my first annual report as General Superintendent of Parks, covering the financial year 1897.

River Parkway. (Section G.)

Most of the year's work has been concentrated at this point, the work being carried on in accordance with plans prepared by F. L. and J. C. Olmsted.

The treatment of the slump in the filling on the marsh opposite the Longfellow Garden, which occurred in the fall of 1896, was considered of first importance. At this point there had been a settlement of eight or ten feet, caused undoubtedly by the great depth of mud lying underneath. Upon recommendation of the City Engineer, a sheet and pile bulkhead 303 feet in length was built about half way down the slope of the beach. This bulkhead cost $2,741.63, and was so built that the beach when constructed would cover it. In order to drain off the water from several springs in this vicinity, two large dry wells about ten feet in diameter were built, extending from a foot below the old marsh surface to within a foot of the present finished surface. These wells drain into the river by means of wooden troughs or pipes. No further trouble has been experienced in this neighborhood from the water or settlement.

The sea wall which enclosed the old gas house wharf has been removed and the stone placed in the trench underneath the sea wall now in process of construction near the West Boston Bridge. This work was done by contract at a cost of $900. The platform

and piles which stood in front of the wharf were removed by city employees.

The old unsightly bulkhead which extended along the south side of Mt. Auburn Street from the Casino property to Sparks Street, a distance of about 970 feet, has been removed. The top stringer and planking, only as far down as the top of the spur shores, were removed, so that the bulkhead remaining, although covered up, still retains its efficiency in supporting the back filling.

Iron fences have been erected at the top of the beach at Boylston Street, on the south side of Mt. Auburn Street, and between Section G and the Cambridge Hospital grounds. The fence at Boylston Street cost $448.82, that at Mt. Auburn Street $931.65, and that on the western boundary line of Section G $300.

The surface drainage system has been completed at a cost of $2,031.83, the work having been done by the City Sewer Department. Twenty-five catch-basins were built on pile foundation on either side of the roadway, 200 feet apart. These catch-basins drain into the river through pipes supported every five feet by piles.

Garden hydrants have been placed between Boylston and Murray Streets, and between Bath Street and the Cambridge Hospital grounds. Some provision will have to be made for watering the territory between Murray and Bath Streets. This was not done this year, as the city water pipes do not as yet extend to this locality. The watering system has cost $330.86.

On either side of Boylston Street and on the roadway between Boylston and Murray Streets, 967.5 linear feet of edgestone have been set and 410 square yards of gutter paved, at a cost of $199.25. It would be advisable not to set any more edgestone until the settlement has ceased.

The old Casino boathouse which stood at the foot of Bath Street has been removed to the foot of De Wolf Street, in Section F.

In 1896 the roadway from Boylston Street to the old gas house wharf was brought to final grade, but since then there has been a settlement in the filling of two or three feet, due to the poor marsh foundation. This year cinders, costing 50 cents per cubic yard,

have been used to bring the roadway to within a foot of final grade. On top of these cinders was spread a foot of coarse selected bank gravel, costing 55 cents per cubic yard, which was rolled with a light roller. The walks have been similarly treated, using a fine gravel for the surfacing. The roadway and walks have been extended to Mt. Auburn Street. Next spring the roadway should be rolled with a ten or twelve-ton roller, which will compact the material sufficiently to withstand carriage travel until it is deemed wise to surface with a Macadam or Telford finish. This surfacing should not be undertaken until all settlement ceases.

8,824 cubic yards of loam have been purchased for Section G this year, at a cost of $6,392.30, or about 72½ cents per cubic yard. This, together with the loam purchased in 1896, has been spread to a depth of from twelve to eighteen inches on the turf spaces and from eighteen inches to two feet on the planting spaces. The total cost of loam for this section is $11,488.99.

The planting of the shrubs has been carried on as fast as the finished surface would allow and is completed, with the exception of a small amount at Boylston Street, at the foot of Bath Street and inside the new iron fence on Mt. Auburn Street.

The first tree planted on the River Parkway since the commencement of the work is the first one east of Murray Street on the south side of the driveway. This is a Platinus Orientalis or plane-tree, and was planted on the 22d of April. There are seventy-one plane-trees yet to be planted on either side of the driveway between Murray and Bath Streets to complete the tree planting. These should be set out next spring. The cost of trees and shrubs planted on Section G is $675.56.

A beach has been built between Boylston Street and the Cambridge Hospital grounds of a slope varying from 2½ to 1 to 8 to 1. The proximity of the Harbor Line in the vicinity of the gas house wharf necessitated a very steep slope in the beach, so steep that it was deemed best to pave the surface with field stone as was done near Boylston Street. The remainder of the beach was constructed of gravel dredged from the river. This gravel is very desirable material for beach building, as there is practically no wash to it

and it makes a very clean surface. 16,445 cubic yards of gravel have been used for this purpose, costing $7,638.01, or about 46½ cents per cubic yard.

In a few places along the beach considerable settlement has taken place, which has pushed or bulged the mud up at the foot of the slope. A portion of this mud has been removed by dredging at a cost of 35 cents per cubic yard, but considerable more should be removed next year so as to give a smooth, uniform surface at the foot of the beach.

The section has been policed by two officers and orderly conduct has been maintained. Fifteen arrests were made—nine for drunkenness, two for disturbing the peace, two for larceny, one for assault and one for destroying park property.

This year 19,688 double loads of filling were received at this section at a cost of $11,928.66, or about 40 cents per cubic yard.

The construction work on Section G, since the commencement of the work, has cost $95,573.50, or about 16 cents per square foot. The cost of the land was $80,651.08, or about 13 cents per square foot, making the total cost to date 29 cents per square foot. The area of Section G is 602,966 square feet. The cost of construction was apportioned as follows: Filling, $35,420.02; labor, $22,836.74; loam, $11,488.99; gravel, $7,638.01; miscellaneous, $18,189.74.

River Parkway. (Section F.)

Section F is that portion of the River Parkway lying between Boylston Street and Western Avenue.

The work on this section this year was confined to the district between Boylston Street and Richardson & Bacon's coal wharf.

The park roadway in this vicinity is situated so far from the edge of the marsh that, in order to give the proper slope to the beach, it was necessary to cut away a portion of the marsh. About 1,780 cubic yards of this material were dredged and spread on the marsh beneath the present roadway. This dredging and spreading cost $445.00, or 25 cents per cubic yard.

In July and October contracts were made with the Bay State Dredging Company to furnish and spread 20,000 cubic yards of

river gravel on the marsh, forming the roadway and beach. This work was done at a cost of 45 cents per cubic yard. Up to December 1, 16,826 cubic yards had been spread, costing $7,571.74. Mud was dredged and removed from the foot of the beach to the amount of 763 cubic yards, costing $190.75.

In October a contract was made with H. F. Miller of Boston to move and remodel the Weld Boat House. This work consisted chiefly in moving the ell from the back of the boat house to the east side; building a new covered piazza on north side of the main structure and on the south side of the detached ell; building new float with two runways and extending bulkhead on south and east sides of detached wing. The contract price was $2,295.

No construction work has been done on Sections C, D, or E of the River Parkway this year.

Cambridge Field.

The completion of Cambridge Field was delayed until early summer owing to the lack of a steam roller with which to roll the macadam walks.

The gravel playfield containing about six acres was thoroughly raked of all large stones and surfaced with a layer of yellow loam one and one-half to two inches thick. This surface was rolled until suitable for base-ball, foot-ball, and other purposes. The playfield should be similarly treated next spring, as the rain and snow will wash the loam into the gravel, leaving a rough, uneven surface. Two substantial back-stops for base-ball have been built and so placed on the playfield that two match games can take place at the same time without interfering with each other. Base-ball has been the most popular summer sport, although "hockey" and foot-ball have been played to some extent. Thirty-two permits have been issued from this office for match base-ball games this year.

A drinking fountain has been placed on the edge of the playfield so that players may get water without going to The Shelter for it.

One of the most enjoyable features of Cambridge Field is the sand courts. These have been crowded to their utmost capacity

almost constantly in seasonable weather. A canvas awning was erected over the entire space occupied by the courts, and in the hot days of summer it was difficult to find a more refreshing spot in this part of Cambridge. Here was the rendezvous of the little ones, and freed from their studies, they would swarm in large numbers in and around the clean granite pits and build their forts, tunnels, etc., in the sand. Here mothers often came with their little ones to be free from their care and to enjoy the coolness of the shade. I know of no other place in Cambridge where so much pleasure and benefit is given at such a slight expense. I would respectfully recommend that two or three such sand courts be placed on Broadway Park in the space originally intended for an arbor.

The "tilts" or "see-saws" in the playground west of The Shelter and in a corner of the large playfield have been very much enjoyed by the older children. Very often all of the nine see-saws have been in use and as many as twenty-six children have been counted on one of them.

A portable board walk has been constructed for winter use extending from the corners of Cambridge and Berkshire Streets and Cambridge and Willow Streets to The Shelter, and from The Shelter on either side to the playfield. The cost of this board walk was $131.33.

The planting of trees and shrubs was completed this fall. During the spring and summer months two gardeners have been constantly employed caring for the grass and shrubbery.

Owing to the scarcity of water in Fresh Pond last winter the playfield was not flooded until January 8. Even then, for the same reason, only about one-half of the field was flooded. During the season there were nineteen days when the ice was in good condition for skating, and during this time the sport was enjoyed by many thousands. The playfield has been lighted by six arc lights, so that skating has been enjoyed until late in the evening.

The rule forbidding the carrying of sticks on the ice has been strictly enforced.

The Shelter was opened to the public on the 22d of May and since then has been open daily. The hours have been from 9

A. M. to 9 P. M. on week days and from 1 P. M. to 9 P. M. on Sundays. At first considerable difficulty was experienced in the management of the younger visitors, but a gradual tendency to better conduct has been noticeable.

The Field and The Shelter have been in charge of a Superintendent who has been on duty during the time The Shelter has been open. Under his direct care have been employed a matron, a janitor and a policeman.

The conduct of the visitors to Cambridge Field has indicated an increasing regard for the Park Ordinances. During the year there have been but nine arrests — five for destroying park property, three for drunkenness and one for assault.

I would respectfully recommend that the large playfield be equipped for an "out-door" gymnasium, with apparatus such as parallel bars, horizontal bars, rings, etc. A cinder track one-third of a mile in length for running and bicycling could be constructed without seriously interfering with any of the sports now enjoyed on the Field. With a track would come the need of having a "bath and locker house." This could be built on one of the vacant lots on Willow and York Streets at a nominal expense.

Winthrop Square.

The work of remodelling Winthrop Square, at the corner of Boylston and Mt. Auburn Streets, was commenced in May, 1897, and finished in July, in accordance with plans prepared by F. L. & J. C. Olmsted.

The old barren soil was replaced by a generous depth of loam and five of the old trees were removed in order to give proper space to those remaining.

A semi-circular walk of macadam finish has been built leading through the square from the corner of Mt. Auburn and Boylston Streets to the corner of Boylston and Winthrop Streets. Settees have been placed on this walk and have been very much used by visitors.

The abutters on the west side of the square gratuitously deeded to the city their rights in the twenty-foot passageway which lay

between them and the square. This passageway has been closed and a brick walk four and one-half feet wide running from Mt. Auburn Street to Winthrop Street substituted for it.

The rowdyism in this vicinity has been noticeably less since the work of remodelling commenced, and little or no trouble from this source has been experienced since the completion of the work.

The remodelling has cost $1,752.87, or 15 cents per square foot.

Esplanade Extension.

The work at the Esplanade Extension between West Boston Bridge and the Charles River Embankment Company's property, has been carried on under the direction and supervision of the City Engineer. The length of wall completed is 2,312 feet, which has cost $52,883.25, including cost of stone ballast.

Esplanade.

The park taking at the Esplanade consists of a strip of land two hundred feet wide lying adjacent to and parallel with the Charles River. It is proposed to construct in this two hundred-foot strip two roadways, one thirty and one forty feet in width; two walks, one fifteen and one twenty feet wide; and three planting spaces, two ten and one seventy-five feet in width. Upon the recommendation of the landscape architects, a row of plane-trees is to be placed on either side of each roadway.

In November contracts were made with four different contractors to furnish 10,000 cubic yards of loam at 84 cents per cubic yard. This loam is to be used in the treatment of the Esplanade, a thousand feet either side of the Harvard Bridge. Up to December 1st, 1,167 cubic yards have been delivered.

East Cambridge Embankment.

The work at the East Cambridge Embankment has consisted entirely in receiving rough filling and ballasting the sea wall on the inside.

From December 1st, 1896, to December 1st, 1897, 32,661 double loads of filling have been received, at a cost of $2,629.35,

or about 5 cents per cubic yard. Most of the material has come from the Boston Subway. The ballasting of the sea wall on the inside has been carried on in advance of the filling. Broken bricks and stone were used for this purpose, the material costing only 10 cents a double load. The area filled to sub-grade is about four sevenths of the whole.

Commercial Avenue has been extended to within a hundred feet of the canal and can be completed to the canal within a month.

Shade Trees.

By a recent Act of the Legislature the power formerly vested in the Board of Aldermen regarding public trees was transferred to the Board of Park Commissioners. During the year thirty-one petitions for the removal of trees have been received, twenty-two of which have been granted. The trees removed, including those dead or dying were as follows :—

Acer platanoides (Norway maple)	15
Acer rubrum (swamp maple)	5
Acer saccharinum (rock maple)	10
Æsculus hippocastanum (horse chestnut)	14
Fraxinus Americana (white ash)	2
Pinus strobus (white pine)	1
Populus alba (silver poplar)	1
Tilia Americana (American linden)	3
Ulmus Americana (American elm)	39
Ulmus campestris (English elm)	3
	93

The trees planted, including on those planted in the streets, were as follows : —

Acer dasycarpum (silver maple)	10
Acer platanoides (Norway maple)	24
Acer saccharinum (rock maple)	97
Ulmus Americana (American elm)	166
	297

The work of placing wire guards around the trees has been steadily continued. I hope that by the end of another year every

tree that is in danger of being gnawed will be protected by one of these wire guards. The number of new guards placed this year is 1,399. Number of old guards repaired, 1,178.

The removal of dead limbs and other tree trimming have kept three men almost constantly employed. The recorded number of trees trimmed during the year is 573.

Some trouble has been experienced by the carelessness of building movers while moving buildings through the streets. I would respectfully suggest that the Board of Aldermen be requested to make it a condition of the granting of the license to move a building through the public streets that a park employee accompany the work and direct the bending of limbs, etc. This expense should be borne by the building mover. The park employee should have the power to stop the work if his instructions are not followed.

Rindge Field and Nursery.

The only construction work done on Rindge Field this year has been the levelling of a piece of ground for cricket or lawn tennis purposes.

The Field has been policed Saturdays and Sundays during the summer months, and fourteen arrests were made.

There have been twenty-three permits issued during the year for match base-ball games. The ball field is in poor condition and should be remodelled. This could be done in a thorough manner for $500.

The Nursery is well stocked with shrubs. Owing to the large amount of street planting this fall the list of trees remaining in the Nursery is rather small. This stock should be replenished next spring.

Public Grounds.

Plans have been prepared by the landscape architects for the remodelling of the Public Library grounds. These plans aim chiefly to remedy the depressed appearance of the Library building, by slight changes in grade and by extensive planting around the entire lot, next the sidewalk. About one-third of the work contemplated by these plans has been completed.

At Webster School, on Upton Street, a vast improvement has been made at a very slight cost. The iron fence which bounded the yard on the south side has been removed. The brick paving between the school and the street has been torn up and replaced by grass, shrubbery and flower beds.

I would respectfully recommend that a systematic treatment be made of the schoolyards in the city. Most of these yards are in a wretched condition and grow worse each year. Two or three thousand dollars spent in this direction would be of inestimable benefit.

Commons and Squares.

No construction work has been done on the commons and squares except that already spoken of at Winthrop Square.

Plans are being prepared for the reconstruction of Hastings Square, and the work can be commenced in early spring.

Broadway Park is greatly enjoyed during the warm weather on account of its delightful shade and pleasant breezes.

It will be necessary next year to build a new board walk for Cambridge Common, as the one now in use will not be safe another season. This will cost about $500. A new back-stop is needed for the ball field.

The Year's Expenditures.

The expenses of the Department for the year are shown in the following summary of the departmental accounts : —

Park Loans.

Amount appropriated April 8, 1897	$82,246 19
Amount appropriated May 11, 1897	125,000 00
	$207,246 19

EXPENDED.

River Parkway. Section G.		
Pay roll	$16,814 21	
Filling	11,928 66	
Gravel	7,638 01	
Loam	6,392 30	
Bulkhead	2,741 63	
Amounts carried forward . .	$45,514 81	$207,246 19

Amounts brought forward . .	$45,514 81		$207,246 19
Engineering	2,000 00		
Ashes	1,598 74		
Teaming	1,306 28		
Drainage system	1,141 72		
Sods	926 86		
Removing old gas wharf .	900 00		
Dredging mud	813 35		
Edgestone and setting . .	798 70		
Iron fences	748 82		
Plants	600 56		
Watering system	330 86		
Stone	292 87		
Moving boat house . . .	236 00		
Fence posts	110 00		
Lawn seats	93 75		
Grass seed	85 70		
Trees	75 00		
Hardware and tools . . .	56 73		
Wooden fence	42 00		
Printing and advertising . .	40 61		
Freight	38 40		
Lumber	26 43		
Signs	24 00		
Sharpening tools	15 18		
Stone cutter	5 00		
Oil	1 80		
Express	1 05		
		$57,825 22	
River Parkway. Section A. (Esplanade Extension.)			
Sea wall	$50,512 87		
Ballast	2,370 38		
Engineering	978 78		
Pay roll	108 00		
Deeds and titles	64 35		
Lumber	23 62		
Advertising	15 19		
Repairing boat	8 50		
Hardware	2 27		
Row locks	2 20		
		54,086 16	
Amounts carried forward,		$111,911 38	$207,246 19

Amounts brought forward . .		$111,911 38	$207,246 19
River Parkway. (Section F.)			
Gravel	$7,571 74		
Lands	2,000 00		
Remodelling boat house . .	1,125 00		
Dredging mud	635 75		
Engineering	497 90		
Painting boat house . . .	118 00		
Advertising	6 68		
Water rent	6 00		
		11,961 07	
River Parkway. (Section C.)			
Lands	$750 00	750 00	
River Parkway. (Section D.)			
Lands	$10,644 22		
Counsel fees	400 00		
Deeds and titles	35 00		
		11,079 22	
Nursery.			
Plants	$70 09		
Trees	67 50		
		137 59	
River Parkway. Section D. (Esplanade.)			
Loam	$284 76		
Pay-roll	44 00		
Advertising	2 29		
Printing	1 25		
		332 30	
Cambridge Field.			
Pay-roll	$4,716 41		
Loam	438 41		
Broken stone	335 06		
Abatement of park betterments	313 14		
Teaming	268 46		
Plants	235 76		
See-saws	230 92		
Awning for sand courts . .	157 00		
Board walk	131 33		
Amounts carried forward . .	$6,826 49	$136,171 56	$207,246 19

Amounts brought forward . .	$6,826 49	$136,171 56	$207,246 19
Back-stops	130 55		
Fire hose	105 50		
Fence posts	98 00		
Telephone service	61 15		
Engineering	59 00		
Drinking fountain and grating	56 48		
Lamps and shades	56 50		
Ashes	45 59		
Hardware and tools . . .	42 49		
Paint and varnish	36 35		
Work on drinking fountain .	35 85		
Furnishings for The Shelter .	32 60		
Blacksmithing	23 18		
Edgestone	12 54		
Canvas	12 00		
Filling	11 55		
Rubbish barrels	7 00		
Paving	5 24		
Cover for vault	5 00		
Flag	4 25		
Sand	2 25		
Hydrant covers	1 00		
Express	75		
		7,671 31	
East Cambridge Embankment. (The Front.)			
Pay-roll	$3,364 94		
Filling	2,629 35		
Ballast	970 47		
Teaming	337 83		
Dredging	300 00		
Engineering	38 17		
Printing	9 00		
Fuel	9 00		
Oil	5 33		
Signs	3 50		
Lumber	3 40		
Advertising	27		
		7,671 26	
Amounts carried forward . .		$151,514 13	$207,246 19

Amounts brought forward . .		$151,514 13	$207,246 19
WINTHROP SQUARE.			
Pay-roll	$614 34		
Loam	495 23		
Teaming	144 00		
Bricks	106 25		
Sod	104 88		
Lawn seats	93 75		
Plants	66 43		
Brick paving	47 25		
Watering system	25 19		
Gravel	23 20		
Engineering	17 10		
Edgestone	14 50		
Stone cutter	75		
		1,752 87	
RINDGE FIELD.			
Pay-roll	$243 00	243 00	
GENERAL ACCOUNT.			
General Superintendent's salary	$1,400.66		
Landscape architect's fees .	654 82		
Board of horse, carriage hire, etc.	428 80		
Car tickets for engineers .	175 00		
Transit	150 00		
Loam	134 96		
Wood ashes	129 50		
Entertaining Metropolitan and Boston Park Commissions	128 56		
Rent	120 00		
Printing reports of 1896 . .	111 15		
Garden hose	110 75		
Fence posts	110 44		
Stakes for engineers . . .	91 50		
Tools and hardware . . .	77 32		
Gravel	75 60		
Car tickets for office . . .	75 00		
Amounts carried forward . .	$3,974 06	$153,510 00	$207,246 19

Amounts brought forward . .	$3,974 06	$153,510 00	$207,246 19
Rubber goods	65 28		
Wheelbarrows	60 75		
Photographic work on report	49 16		
Repairs on carriage . . .	40 35		
Lumber	11 74		
Printing and advertising . .	10 60		
Plants and bulbs	8 90		
Cleaning transit	7 80		
Repairing locks	3 85		
Express	3 70		
Freight	2 42		
Car fare	1 36		
		4,239 97	
Office Expenses.			
Salary of bookkeeper . . .	785 00		
Salary of stenographer . .	602 00		
Telephone service	181 15		
Stationery and printing . .	145 36		
Repairing typewriter . . .	7 10		
Carpentering	5 65		
Subscription to "Garden & Forest"	4 00		
Telegrams, etc.	2 72		
Express	1 25		
		1,734 23	
			159,484 20
Balance unexpended			$47,761 99

Park Maintenance.

Amount appropriated April 8, 1897	$12,000 00

EXPENDED.

Commons and Squares:—		
Pay-roll	$4,385 81	
Plants	396 02	
Teaming	83 25	
Repairing lawn seats . . .	61 00	
Work on flag staffs . . .	43 74	
Amounts carried forward . .	$4,969 82	$12,000 00

Amounts brought forward . .	$4,969 82		$12,000 00
Flags	33 60		
Printing	20 00		
Signs	20 00		
Hardware and tools . . .	15 49		
Lumber	11 74		
Hose	10 10		
Hose reel	4 85		
Repairs on hydrant . . .	4 29		
Re-setting tablet	2 00		
Repairing flag	2 00		
		$5,093 89	

SHADE TREES.

Pay-roll	$2,641 18		
Wire netting	517 73		
Teaming	113 63		
Fence at Washington Elm .	75 00		
Loam	64 80		
Zinc	45 90		
Engineering	22 75		
Shoeing horse	10 50		
Rope	9 50		
Printing	9 25		
Sharpening tools	7 70		
Hardware and tools . . .	5 84		
Repairing ladder	5 00		
Coal tar	3 00		
Whale oil soap	2 40		
Repairing pulley	1 00		
Express	15		
		3,535 33	

CAMBRIDGE FIELD. THE SHELTER.

Pay-roll	$1,103 33		
Electric lighting	104 46		
Janitors' suits	57 75		
Telephone service	26 40		
Carpentering	25 02		
Letters and numbers . . .	17 91		
Soap	16 10		
Awnings	16 00		
Amounts carried forward . .	$1,366 97	$8,629 22	$12,000 00

Amounts brought forward . .	$1,366 97	$8,629 22	$12,000 00
Laundry	9 84		
Repairs on fixtures . . .	9 78		
Toilet paper	7 25		
Rubbish barrels	6 50		
Hardware	5 55		
Checks	5 04		
Brushes	4 22		
Rubber mat	3 00		
Step ladder	3 00		
Metal polish	2 65		
Sponges	2 05		
Sawdust	2 00		
Cheesecloth	1 75		
Incandescent lamps . . .	1 50		
		1,431 10	
CAMBRIDGE FIELD.			
Hose reel	$20 00		
Sprinkler	15 00		
Work on flag staff	9 50		
		44 50	
RINDGE FIELD.			
Pay roll	$738 72		
Repairing lawn seats . . .	40 00		
Repairs on hydrant . . .	5 79		
		784 51	
PUBLIC GROUNDS.			
Pay-roll	$292 12		
Loam	219 76		
Teaming	83 25		
Plants	45 10		
Sods	36 00		
Engineering	15 72		
Sand	13 50		
		705 45	
BROADWAY PARK.			
Pay-roll	$52 13	52 13	
GENERAL ACCOUNT.			
Board of horse	$130 00		
Bulbs	101 75		
Amounts carried forward . .	$231 75	$11,646 91	$12,000 00

Amounts brought forward . .	$231 75	$11,646 91	$12,000 00
Wood ashes	80 50		
Horse shoeing	7 50		
Hardware and tools . . .	7 25		
Flags and bunting	6 40		
Pulleys	6 09		
Printing	6 00		
Repairs on harness . . .	3 90		
Repairs on bicycle	3 25		
Express	15		
		352 79	
			11,999 70
Balance unexpended			$ 30

Respectfully submitted,

HOWARD E. WHITING,

General Superintendent of Parks.

REPORT OF THE LANDSCAPE ARCHITECTS

Brookline, Mass., December 24, 1897.

Mr. George Howland Cox, Chairman of the Park Commission, Cambridge, Mass.:—

Dear Sir: We beg leave to make the following report covering the year which is now closing:

For the treatment of Rindge Field in North Cambridge and The Front in East Cambridge, preliminary sketches were prepared four years ago, but no designs were ever formally adopted. In the case of The Front, the sketches called for a beach similar to that since constructed at North End Beach in Boston; but upon consideration, the Board decided that this arrangement was unwise, and in so far adopted a plan as to fix upon a continuous sea wall like that of the opposite Charlesbank. In accordance with this decision, a wall was constructed and filling has been going on during the past year. The question of a location for a sewer in Rindge Field was referred to us during the year, and, in the absence of an adopted plan, we suggested a location in conformity with the tentative sketches for the development of the field as a playground.

Broadway Square and Cambridge Field have called for practically no attention from our office during the past year, except for some occasional advice or assistance to the Superintendent in the matter of carrying out the planting.

Winthrop Square has been remodelled in accordance with a simple plan furnished by us. A semi-circular walk backed by shrubbery furnishes place for benches in the shade of the existing elms looking out over a small lawn on the Boylston Street side.

At the request of the Board, we have made some suggestions for the revision and extension of the planting about the Public Library,

chiefly with a view to modifying the unpleasing effect produced by the depression of a portion of the ground below the grade of the surrounding sidewalks, and, in connection with this planting, suggestions for changes in some of the walks. These suggestions have been in part executed during the year.

For the Webster School grounds we planned some planting and a little garden where the children of the school may grow and tend their own flowers.

By far the most important work which your Board has taken in hand, both on account of its magnitude and on account of its value to the community, is the improvement of the Charles River. With the exception of Fresh Pond, the development of which as a public park has been undertaken by the Water Board, the Charles River is the only notable landscape feature of the city. It is a sound general principal that the most important park work of any city should take advantage of the landscape features especially characteristic of the locality, and your work has been in accordance with this principle, while at the same time meeting a difficult sanitary problem.

The Cambridge shore of the Charles River is now held between the Watertown line and Mt. Auburn Street by the Cambridge Cemetery, the Metropolitan Park Commission and the Cambridge Hospital. From that point to the West Boston Bridge the shore is held by your Commission, except for two gaps. One of these is between the West Boston Bridge and the Esplanade and the other is the land occupied by the Riverside Press and the Cambridge Electric Light Company between River Street and Western Avenue. Within the last month we have been asked to report upon a plan for diverting the Parkway so as to pass behind the buildings on this land. The plan differs from the similar plans considered last year in that it would require less land to be taken and would leave the river for a shorter distance, but to offset this it calls for an exceedingly crooked line, while the same general objections apply to it as to the others. Permit us to quote from our last report: "The original plan had been to keep the Parkway adjacent to the water throughout its length, and study of these sug-

gested alternatives only confirmed us in the opinion that the original plan was still the best plan. From the point of view of those who will use the Parkway for walking, cycling or driving, there can be no question as to the superior pleasantness of the riverside route, with its sunny views up and down the stream and across to the opposite shore now controlled by the Metropolitan Park Commission. The alternatives suggested involved separation from the river for a distance of one thousand or more feet, slanting crossings of River Street and Western Avenue, a coalescence of the Parkway with the traffic road known as Blackstone Street throughout its length, and instead of the openness of the river, brick and wooden industrial buildings, crowding and overshadowing the way, not on one side only, but on both sides. Those who will use the ponded river of the future for boating or skating, and those who will travel by the Metropolitan Commission's Parkway, would, if they had the chance, speak equally decidedly in favor of the continuous public river bank proposed by the original plan. The riverside parkway, with its promenade and driveway and its rows of lamps and trees, will look reasonably well, at least when seen from the stream or the opposite shore; moreover, such buildings as abut upon it will naturally tend to face it handsomely. The suggested alternative parkway routes would, on the other hand, leave the Cambridge shore between the streets above mentioned without any screen of trees and in possession of private owners who would have no incentive to improve the appearance of their buildings as seen from the water and from the other shore."

If it is felt that the Commission should not cut off access to the river for commercial purposes from the owners of these lands, provision could be made in the construction of the Parkway for the transfer of coal and other materials by covered bridges which would be far less objectionable than the crooked diversion of the whole drive through the factory region.

In proceeding with the construction of the Parkway your Commission has been hampered by the continued existence of the same conditions which made private ownership of the banks a menace to health; but the advantages to be gained from excluding the tides

by a dam at the river's mouth have been so fully stated before that we need not recapitulate them. In view of the possible construction of such a dam in the not distant future, your Board wisely decided that it would be unjustifiable to go to the expense of some miles of costly retaining walls, when the construction of the dam would not only render them unnecessary but would permit a far more agreeable treatment of the shores at a fraction of the cost. Some of the reasons leading your Board to this decision may be found in our last annual report, together with a plan for the partial construction of the Parkway west of Boylston Street, in such a manner as to be adapted to completion in accordance with either plan.

During the past year this plan has been executed, with some minor changes. The principal alteration has been the removal of the Gas Company's wharf, which was retained on our plan because of the closeness of the Harbor Commissioners' line at this point and in order to provide a gathering place between the roadway and the water, since the sloping temporary bank would leave no room for the outer sidewalk or promenade. By extending the filling further to the west a gathering place with seats and shrubbery was provided by the changed plan, similar to that shown next the Cambridge Hospital on the original plan. Plans, also, for the planting of trees and shrubs on this section were prepared by us early in the year, and a large part of the planting has been executed. Grading plans were made for the portion of the Parkway immediately east of Boylston Street, upon which construction has been proceeding.

Your Board should feel encouraged in your efforts to improve the condition of the Charles River, by the action of the Metropolitan Park Commission in determining upon the construction of the driveways upon the southern bank of the river from Brighton to the Boylston Street Bridge. The plans for this work, involving such a length of construction upon the marshes, brought sharply into view the economy to be secured by damming out the high tides from the river, so as to avoid the necessity of filling to an elevation above the highest floods. The Metropolitan Park Commission is so confident that the manifold advantages to be secured by a dam across the mouth of the river, whether looked at from

the point of view of public health, public enjoyment, or economy of public funds, will ultimately prevail with the people of the district, that they have determined to avoid the great expense of heavy filling by keeping their construction down nearly to the level of the marsh and excluding the tide for the present by a dyke along the river's edge. Like your own Board, they are forced to proceed in a piece-meal fashion and at additional expense to the public because the invading tides are not controlled by a dam. Every year's delay in meeting the problem of the tidal river will involve an expense of thousands of dollars in public and private work, for the development of the region is bound to go on at whatever cost, and if the invader is not met at the narrow gateway he must be met throughout the whole low-lying region now affected by the tides wherever occupation is attempted, whether for residence, or business or pleasure.

We beg to call attention again to two matters referred to in our last annual report: the desirability of rendering the Boston Park System and southern suburbs pleasantly accessible from Cambridge by a suitable bridge at the head of the Charles River Basin, and the desirability of securing some connection between Fresh Pond and the Charles River Parkway. Although these connections would manifestly be of special benefit to Cambridge, they would form also connecting links in the great system of parks and parkways of the Metropolitan District, for any parkway leading from the Middlesex Fells and the Mystic Lakes on the north to the parks and reservations south of the Charles River must almost inevitably pass by way of Fresh Pond. The Metropolitan Park Commission has extended its Charles River Reservation to Mount Auburn Street at the corner of Elmwood and a public-spirited association is endeavoring to secure a part, at least, of the adjacent Lowell Estate as a Memorial Park in honor of the poet. It would seem, therefore, a favorable opportunity for providing, possibly by co-operative action, one, at least, of these important but costly connections.

Respectfully submitted,

F. L. & J. C. OLMSTED.

REPORT OF THE CITY ENGINEER

OFFICE OF CITY ENGINEER, CITY HALL,
CAMBRIDGE, December 1, 1897.

George Howland Cox, Esq., President Park Commission :—

DEAR SIR : The principal engineering work done the past year has been in connection with the improvement of park land on Charles River.

Much time has been required in laying out the extensive construction carried on between Boylston Street and the Cambridge Hospital. About seventeen acres have been filled, graded, and largely finished and planted as a parkway. Four thousand lineal feet of shore line have been sloped and covered with stone riprap or heavy ballast gravel in a substantial manner.

While the filling of the low marsh land near the old Casino grounds was being placed, a very marked settlement of the filling suddenly took place, accompanied by a movement of quantities of mud and filling toward the river. For a considerable distance along the river shore at this point the hard bottom lies at a depth of about twenty-six feet below the old surface of the marsh, being overlaid with soft marsh mud. To retain this mud and prevent it, with the filling placed on it, from slipping into the river a bulkhead of timber sheet piling was driven through the mud into the hard material below, properly capped, and braced with inclined or spur shore piles. A contract was made with Messrs. John N. Hayes & Company on March 18, 1897, for doing this work. Three hundred and three lineal feet of bulkhead were placed at a total cost of $2,741.63.

Early in the season an arrangement was entered into with the various owners of flats on Charles River between Main Street and the lands of the Charles River Embankment Company, by which

the filling of all the flats and the proposed Esplanade was to be done jointly, and a sea wall enclosing these flats about two thousand five hundred feet in length on the river was to be built by the city. Pursuant to this agreement, on May 17, 1897, a contract was made with Mr. Thomas A. Rowe to build the wall.

Soundings showed that the depth of mud on the line of the proposed wall varied greatly; in some places little or no mud was found, while in one place hard bottom was about twenty-six feet below low-water level. In preparing a foundation for the wall the mud was first excavated till hard material was reached; the trench so made varying in width with the depth excavated. For a part of the distance just enough was taken out to allow the wall to rest on the natural bed of gravel. The deeper parts of the trench were then filled with good gravel obtained from a bank in the bed of the river near by.

In the deepest part of the trench large quantities of stone obtained from an old wall further up the river at the former gas works wharf, was mixed with the gravel as put in.

On the foundation so prepared a heavy footing course of long stones was laid and upon this the wall proper built. The wall is also heavily ballasted behind with the gravel and stone ballast. The masonry is similar in character to that built in 1895 at The Front. The greater portion of the wall is now built and will be finished at an early day. There has been paid to date on account of the construction of the wall fifty two thousand eight hundred eighty-three dollars and twenty-five cents ($52,883.25).

In connection with the construction of this sea wall a contract was entered into with the New England Dredging Company for filling the two hundred foot strip, or Esplanade, now owned by the city, and also conjointly the abutting owners have contracted to fill the flats between the Esplanade and the present shore line near Main Street. It is expected that this work will be begun in the spring of 1898. By this arrangement an area of 1,313,311 square feet, or over thirty acres of mud flats will be reclaimed, and the whole improvement is to be completed by the first of the year 1899. When this is done one of the largest and most important

improvements ever attempted in the city will have been completed.

The survey and location of the Park line on the Charles River Parkway has been practically completed; twelve stone bounds have been set at proper points to mark the line. A large number more will be needed when the lands are filled and improved so as to render the location of the bounds permanent.

A matter that will require early attention is the completion of the filling of Commercial Avenue opposite The Front, and the crossing of the canal by a bridge connecting the two portions of Commercial Avenue.

The early completion of this avenue is rendered more necessary by the recent decision of a special commission appointed by the Court to abolish the grade crossings at Prison Point Street. By this decision the grade of Bridge Street at Prison Point Street and Commercial Avenue is to be raised about five feet. This will render necessary the raising of the grade of Commercial Avenue between Bridge Street and the canal.

If Commercial Avenue is built and graded by the time the grade crossing is abolished, then the expense of raising the grade of Commercial Avenue is to be charged to the cost of the abolishment of the grade crossing.

Further than this, it would seem as though the time had arrived when the avenue should be completed and the benefit to be derived from this improvement, now only partially completed, obtained. All the land has been taken for this purpose; it remains to complete the filling, construct the bridge across the canal, and surface the street its entire length, some 2,450 feet.

From five to seven assistants have been employed almost constantly on engineering work connected with the Park Department. The expenditure for the year for the purpose has been $3,813.03.

Very truly yours,

L. M. HASTINGS,

City Engineer.

APPENDIX

ORDINANCES

PASSED BETWEEN MARCH 1, 1897, AND MARCH 1, 1898

An Ordinance in Relation to the Disposal of Litter and Rubbish in Streets, Commons, Public Places and Squares.

Be it ordained by the City Council of the City of Cambridge, as follows:—

SECTION 1. Except as heretofore otherwise provided by ordinance, no person shall deposit, drop, place, put, sweep or throw into or upon any street, common, public place or square in this city any ashes, board, bottles, bricks, card, cinders, house dirt, iron or steel filings, glass, hand-bill, hair, piece of hoop, noxious or refuse liquor, manure, nail, offal, waste paper, sawdust, shavings, shells of any kind, shreds, soot, stones, animal or vegetable substance, solid matter or substance, sweepings, tin cans, wood, or filth or rubbish of any kind.

SECT. 2. Whoever violates, causes, assists in or procures the violation of any provision of this ordinance shall be punished by a fine not exceeding twenty dollars for each offence.

[*Approved May* 5, 1897.]

An Ordinance in Relation to the Construction, Maintenance and Inspection of Buildings.

Be it ordained by the City Council of the City of Cambridge, as follows:—

SECTION 1. The Superintendent of Public Buildings shall be an able and experienced architect, builder or mechanic. He shall have the sole charge of the construction, inspection, repair, alteration, care and custody of all the public buildings of the city not constructed for or by any other special department, and shall supervise and direct the construction of buildings of other departments whenever so requested by any such department, and shall have the control of the enforcement of the plumbing ordinance. He shall receive such compensation for his services as the City Council may from time to time determine.

SECT. 2. In the month of December of each year he shall present to the City Council a written report, showing the number and condition of all buildings under his care, and what repairs, in his opinion, may be needed upon each for the next twelve months, and the probable cost of such repairs.

SECT. 3. As often as practicable he shall examine and inspect the materials, construction, alteration, repair and use of all buildings and other structures erected and in the process of erection, alteration or repair within the city limits, excepting such buildings and structures as are used and occupied by the United States or the Commonwealth, also excepting bridges, quays and wharves, and as far as may be necessary for the performance of his duties enter any such building or premises.

For other than department buildings and structures he shall require plans and specifications or a description of any proposed erection, alteration or repair, other than necessary repairs, to be filed in his office and shall grant licenses for such erection or alteration and repairs other than necessary repairs, when the plans, specifications or descriptions are so filed in conformity with the Ordinances of the city and the laws of this Commonwealth. He shall make a record of all violations of this Ordinance, with the street and number where such violations occurred, the names of the owners, architects and master mechanics and all other matters relative thereto. He or his assistants shall examine all buildings reported dangerous or damaged by fire or accident, and make a record of such examinations, stating the nature and amount of such damage, the name of the street and number of the building, the names of the owner and occupant, and the purpose for which it is occupied; he shall examine all buildings for which applications have been made for permits to raise, enlarge, alter, build upon or tear down, and make a record of such examination. The records required by this section shall always be open to the inspection of any officer of the city.

SECT. 4. He shall have all the right and authority that the Inspector of Buildings now has and that many hereafter be given and conferred by the laws of this Commonwealth and Ordinances of this city now and hereafter in force relating to the inspection, construction, use, occupation, alteration, repair and safety of buildings and structures within the limits of the city for the prevention of fires and the protection of life, and shall cause the Ordinances of the city and the statute law of this Commonwealth now and hereafter in force with reference thereto to be strictly enforced. He may enter upon the premises wherein any fire has occurred and ascertain, if possible, the origin of the fire. He shall designate an assistant in his department as his deputy, who, in the event of, and during his temporary absence or disability shall have and exercise all the powers and authority of the Superintendent.

SECT. 5. Every person before proceeding to build, erect, alter or repair in any way, except in making necessary repairs, any structure, building, wall or fence whatsoever (if said wall or fence is at any place nearer than five feet to the line of any public street next adjacent thereto) except bridges, quays, wharves or buildings of the Government of the United States or this Commonwealth, shall first give written notice to the Superintendent of his intention, with a plan of the structure, building, wall or fence proposed, the materials to be used, the number of the street, the precise location, and the name of the owner or owners of the land; and shall obtain from the Superintendent a written license so to do; and in all cases where any part of such structure, building, wall, or fence is nearer than five feet to the line of the street next adjacent thereto, he shall obtain free of expense from the City Engineer, if in the power of the latter to furnish the same, the lines and grades of the streets adjoining which he proposes to build, erect, alter or repair as aforesaid.

The Superintendent may also, before issuing a license as aforesaid, require the applicant to give seven days' notice in writing of the application to any and all persons whose interests the Superintendent considers may be effected by the proposed work.

All materials are to be of good quality for the purposes for which they are to be used, and to conform to legal, trade and manufacturers' standards, and be subject to the approval of the Superintendent.

SECT. 6. The Superintendent shall designate in every permit for the erection of a new building the lowest grade at which the floor of the basement story of such building may be laid.

SECT. 7. No building more than one hundred and twenty-five feet in height above the grade of the street shall hereafter be erected in this city, provided, however, that this restriction shall not apply to grain or coal elevators or sugar refineries, nor to spires of churches, steeples, domes, towers or cupolas erected for strictly ornamental purposes, of fireproof material.

SECT. 8. Every portion of every structure in process of construction, alteration, repair or removal, and every neighboring structure or portion thereof affected thereby, or by any excavation, shall be properly constructed and sufficiently supported. The Superintendent may take such measures as the public safety requires to carry this section into effect, and any expense so incurred may be recovered by the city from the owner of the defective structure.

SECT. 9. Every building of three or more stories in height within this city now or hereafter used, in whole or in part, as a public building, public or private institution, schoolhouse, church, theatre, public

hall, place of assemblage or place of public resort, and every such building in which ten or more persons are employed above the second story in a factory, workshop or mercantile or other establishment, and every hotel, family hotel, apartment house, boarding house, lodging house or tenement house within this city in which ten or more persons lodge or reside above the second story, and every factory, workshop, mercantile or other establishment within this city, the owner, lessee or occupant of which is notified in writing by the Superintendent that the provisions of this section are deemed by him applicable thereto, shall be provided with proper ways of egress or other means of escape from fire sufficient for the use of all persons accommodated assembling, employed, lodging or residing in such building; and such ways of egress and means of escape shall be kept free from obstruction, in good repair and ready for use. Every room above the second story in any such building in which ten or more persons are employed shall be provided, if the Superintendent shall so direct in writing, with more than one way of egress by stairways on the inside or outside of the building, placed as near as practicable at the opposite ends of the building; stairways on the outside of the building shall have suitable railed landings at each story above the first, and shall connect with each story by doors or windows, and such landings, doors and windows shall be kept clear of ice and snow and other obstructions. No person shall be employed in a factory, workshop or mercantile or other establishment in a room above the second story from which there is only one way of egress if the said Superintendent shall so direct in writing. All doors and windows in any building subject to the provisions of this section shall open outwardly, if the Superintendent shall so direct in writing. No portable seats or other obstructions shall be allowed in the aisles or passageways of such buildings during any service or entertainment held therein. The proscenium or curtain opening of all theatres shall have a fire-resisting curtain of some incombustible material and such curtain shall be properly constructed and shall be operated by proper mechanism; the certificate of the Superintendent shall be conclusive evidence of a compliance with such requirements.

Sect. 10. Every hotel, family hotel, apartment house, boarding house, lodging house or tenement house hereafter erected, more than two stories high from the level of the street, shall be provided with two stairways placed in such a manner at opposite sides or ends of the building that the inmates shall have easy means of egress at all times; said stairways to lead from each story, and all halls leading from front to rear shall be provided with doors so as to form a fire and smoke stop.

SECT. 11. Every building hereafter built, and every building occupied by more than one family, shall have, according to its height, condition, construction, surroundings, character or occupation, and number of occupants, one or more safe means of egress in case of fire, as the Superintendent may direct.

SECT. 12. Every schoolhouse two stories or more high, every church, theatre, public building, hall, place of assembly or resort, every building occupied above the second story by two or more families, or as a tenement, boarding or lodging house, or as a factory or workshop, where ten or more persons are employed, shall have at least two independent ways of egress, each accessible from each apartment, and one of which shall be enclosed in brick walls, shall have no interior openings other than the doors of the apartments from which it is an exit, and shall be provided with a ventilating skylight, which can be operated from the lower hall. All ways of egress from every building shall be kept in good repair. No obstruction shall be placed upon any way of egress from any building. Provided, however, with the approval of the Superintendent such stairways may be constructed as hereafter provided in Section twenty-six.

SECT. 13. Any owner or lessee responsible for the condition of a building shall be entitled to a certificate, or if the original has been issued, an exhibition of the duplicate thereof on the Superintendent's records to the effect that such building is provided with safe means of egress, if and whenever such is the case in the Superintendent's opinion. Any tenant of or person employed in any private building, and in the case of any public building or public school, any citizen of Cambridge shall be entitled to an exhibition of the Superintendent's record, and, if no certificate has been issued, may apply to have a certificate issued for such building.

SECT. 14. In case any building subject to Sections nine, sixteen, seventeen, eighteen, nineteen, twenty and twenty-one of this Ordinance is owned, leased, or occupied, jointly or in severalty, by different persons, any one of such persons shall have the right to apply to any part of the outside of such building and to sustain from any part of the outside wall thereof, any way of egress or means of escape from fire specified and described by the Superintendent, notwithstanding the objection of any other such owner, lessee, or occupant; and any such way of egress or means of escape may project over the highway.

SECT. 15. The platforms, landings and steps of every fire escape shall be strong enough to carry a load of seventy pounds to the square foot in addition to the weight of material.

SECT. 16. In this city no building three or more stories in height

designed to be used, in whole or in part, as a public building, public or private institution, schoolhouse, church, theatre, public hall, place of assemblage or place of public resort, and no building more than two stories in height, designed to be used above the second story, in whole or in part, as a factory, workshop or mercantile or other establishment, and having accommodations for ten or more employees above said story, and no building more than two stories in height designed to be used above the second story, in whole or in part, as a hotel, family hotel, apartment house, boarding house, lodging house, or tenement house, and having ten or more rooms above said story, shall hereafter be erected until a copy of the plans of such building has been deposited with the Superintendent by the person causing the erection or construction of such building, or by the architect who has drawn such plans, which plans shall include therein the system or method of ventilation provided for such building, together with a copy of such portion of the specifications of such building as the Superintendent may require, nor shall any such building be so erected without the provision of sufficient ways of egress and other means of escape from fire properly located and constructed. The certificate of the Superintendent endorsed with the approval of the Chief of the District Police Force, shall be conclusive evidence of a compliance with the provisions of this Ordinance; provided that after the granting of such certificate no change is made in the plans or specifications of such ways of egress and means of escape, unless a new certificate is obtained therefor. The Superintendent may require that proper fire stops shall be provided in the floors, walls and partitions of such buildings, and may make such further requirements as may be necessary or proper to prevent the spread of fire therein or its communication from any steam boiler or heating apparatus; and no pipe for conveying hot air or steam in such building shall be placed nearer than one inch to any woodwork, unless protected to the satisfaction of the Superintendent by suitable guards or casings of incombustible material, and no wooden flue or air duct for heating or ventilating purposes shall be placed in any such building.

Sect. 17. Any person erecting or constructing a building, or any architect or other person who shall draw plans or specifications or superintend the erection or construction of a building, in violation of the two preceding provisions of this Ordinance, shall be punished by a fine of not less than fifty nor more than one thousand dollars, and may also be enjoined, as otherwise provided by statute at the instance of the Superintendent.

Sect. 18. It shall be the duty of the Superintendent to examine from time to time all buildings subject to the provisions of Sections

nine and sixteen of this Ordinance. In case any such building conforms, in the judgment of the Superintendent, to the requirements of this Ordinance, he shall issue to the owner, lessee or occupant of such building, or of any portion thereof, used as above mentioned in Sections nine and sixteen of this Ordinance, a certificate to that effect, specifying the number of persons for whom the ways of egress and means of escape in case of fire are deemed to be sufficient; such certificate shall be conclusive evidence, as long as it continues in force, of the compliance on the part of the person to whom it is issued, with the provisions of this Ordinance; but such certificates shall be of no effect in case a greater number of persons than therein specified are accommodated or employed, or assembled, lodged or reside within such building or portion thereof, or in case such building is used for any purposes materially different from those for which it was used at the time of the granting thereof, or in case the internal arrangements of such building are materially altered, or in case any ways of egress or means of escape from fire existing in such building at the time of such granting are stopped up, rendered unavailable or materially changed; and in no case shall such certificate continue in force for more than five years from its date. Such certificate may be revoked by the Superintendent at any time upon written notice to the person holding the same or occupying the premises for which it was granted, and shall be so revoked whenever, in his opinion, any conditions or circumstances have so changed that the existing ways of egress and means of escape are no longer proper and sufficient. A copy of the said certificate shall be kept posted in a conspicuous place upon every floor of such building by the person occupying the premises covered thereby.

Sect. 19. Upon an application being made to the Superintendent for the granting of a certificate under Sections sixteen and eighteen of this Ordinance, he shall issue to the person making the same an acknowledgment that such certificate has been applied for; and pending the granting or refusal of such certificate, such acknowledgment shall have, for a period of ninety days, the same effect as such certificate, and such acknowledgment may be renewed by the Superintendent with the same effect for a further period not exceeding ninety days, and may be further renewed by the Chief of the District Police Force, until such time as such certificate shall be granted or refused.

Sect. 20. In case any change is made in any premises for which a certificate has been issued under this Ordinance, whether in the use thereof or otherwise, such as terminates the effect of such certificate, as above provided in Section eleven, it shall be the duty of the person making the same to give written notice thereof forthwith to the Superintendent, and to the Chief of the District Police.

Sect. 21. In case any building, or portion thereof, subject to Sections nine, sixteen, seventeen, eighteen, nineteen and twenty of this Ordinance, is found by the Superintendent to fail to conform thereto, or in case any change is made in such building or portion thereof, such as terminates the effect of a certificate formerly granted therefor as aforesaid, it shall be the duty of the Superintendent to give notice in writing to the owner, lessee, or occupant of such building, specifying and describing what additional ways of egress or means of escape from fire are necessary, in the opinion of the Superintendent, in order to conform to said provisions of this Ordinance, and to secure the granting of a certificate as aforesaid. Notice to any agent of such owner, lessee, or occupant in charge of the premises shall be sufficient notice under this section to such owner, lessee, or occupant.

Sect. 22. When a license is required by law or municipal Ordinance, in order to authorize any premises to be used for any purpose mentioned in Section nine, no license for such purpose shall be granted until a certificate for such building or portion thereof shall first have been obtained from the Superintendent, as above provided, and no such license hereafter issued shall continue in force any longer than such certificate remains in force.

Sect. 23. All frame or wooden buildings exceeding a height of fifteen feet from underpinning, shall be built with sills, posts, girts, plates and rafters, all of suitable size and mortised, tennoned, braced and pinned, and with suitable studs not less than 2 inches by 4 inches to space not more than 16 inches on centres, and if the building exceeds four hundred feet in area the posts and girts shall not be less than 4 inches by 8 inches. Floor timbers shall not be less than 2 inches thick.

Sect. 24. No ledger boards shall be used in place of girts in any building where the posts exceed fifteen feet in height; and all openings at floors, whether caused by ledger-board floor joists laid upon girts, or floor joists projecting above sills, shall be stopped by joists not less than two inches thick fitted tightly between the studs.

Sect. 25. In all buildings hereafter erected or altered in whole or in part, in which lathing and plastering is to be done, in which fire stops are required or gas pipes and meters are to be placed, the owners or builders thereof shall before proceeding to lathe, plaster, place fire stops, gas pipes or meters therein give written notice to the Superintendent that the premises are ready for inspection.

Whenever such inspection is found to be satisfactory to the Superintendent, the latter shall forthwith issue to the owners or builders a license to lathe and plaster, and locate fire stops, gas pipes and meters; and all such work shall be done in strict conformity with the terms of such license.

Gas piping and location of gas meters shall also be done in accordance with the terms and conditions named in Section fifty-six.

SECT. 26. In every wooden building in which two or more families reside on the same floor there shall be a partition wall of brick, or other incombustible material satisfactory to the Superintendent, dividing each apartment; if of brick to be not less than eight inches thick, built up to the under side of the roof covering, and the said covering laid and embedded in mortar upon the walls, or built up twelve inches above the roof and covered with metallic covering, or where said wall is not carried above the roof there shall be placed on each side of said wall a rafter which shall be filled in solidly with mortar between said walls and rafters, provided openings in party or partition walls may be made for the purpose of stairways, in which case all partitions around said openings shall be brick nogged, and all such partitions shall be lathed on both sides with metal or wire lathing and plastered, and all door openings in such partitions shall be furnished with metal covered doors satisfactory to the Superintendent. The soffits of all such stair ways shall be lathed with metal or wire lathing. Party walls of brick in buildings more than two stories high shall be at least twelve inches thick to first story floor.

SECT. 27. The exterior walls of every building hereafter erected for or converted to use as a tenement or lodging house, and not having an exposure on an open space, street, court or passageway more than twenty feet in width, shall not exceed thirty feet in height.

SECT. 28. All buildings except single dwellings more than two stories high shall have permanent means of access to the roof from the inside. The openings for the same shall not be less than eighteen by thirty inches.

SECT. 29. In the erection or alteration of any building, the material of which, in whole or in part, is other than brick, stone or wood, the thickness of walls of such material and the method of construction shall be such as the Superintendent shall approve.

SECT. 30. Every wooden building hereafter erected shall be not more than three stories in height from the grade of the street or place upon which it is to be erected, nor any part thereof be less than one foot six inches from the line of any adjoining lot, nor if there is a building upon the adjoining lot, be nearer than three feet to such building without the intervention of a brick wall or other incombustible material satisfactory to the Superintendent.

SECT. 31. No building hereafter erected or altered which is to be used in whole or in part for stable purposes shall be built nearer than five feet to any adjoining lot nor, if there is a dwelling house upon the

adjoining lot without the approval of the City Council, be nearer than fifteen feet to such dwelling house, except that on the rear line of a lot such stable may be within eighteen inches of line when such line does not intersect the line of any public street.

SECT. 32. The sills of wooden dwelling houses shall be not less than one foot above the ground to the under side of the same. All basement walls of frame or wooden buildings shall be not less than eight inches thick, if of brick, and sixteen inches thick if of stone. When such walls are eight feet high or more above the surface of the ground, they shall be not less than twelve inches thick if of brick, and not less than eighteen inches thick if of stone.

SECT. 33. Unless otherwise permitted by the Statutes of this Commonwealth or ordinance of this city, no person shall construct or place or cause to be constructed or placed a portico, porch, door, window, step or other projection projecting into a street except that a special license may be granted to build a cornice when the extreme projection does not exceed twenty inches beyond street line.

SECT. 34. No cellar or basement cellar of any building shall be constructed below the grade of thirteen feet above mean low water, except upon a special written license from the Superintendent, and to the extent only as specified in said license. The cellar of every dwelling hereafter built on filled or made land, or where the grade or nature of the ground requires, shall be sufficiently protected from water and damp by a bed at least two inches thick over the whole, of concrete, cement and gravel, tar and gravel, or asphalt, or by bricks laid in cement. The space between any floor and the cellar bottom shall be well ventilated.

SECT. 35. All excavations shall be so protected, by sheet piling, if necessary, by the person causing the same to be made, that the adjoining soil shall not cave in by reason of its own weight; or adjoining building shall not thereby be endangered. All permanent excavations within the fire limits shall be protected by retaining walls.

SECT. 36. All elevator wells and light shafts in buildings more than two stories high, unless built of brick, shall be filled between studs with fire-proof material and lined with metal or plastered on metallic lathing as may be directed by the Superintendent.

SECT. 37. All mortars shall be made with such proportion of sand as will ensure a proper degree of cohesion and tenacity, and secure thorough adhesion to the material with which they are to be used, and the Superintendent shall condemn all mortars not so made. The following rules must be complied with: Mortar below level of water shall be no poorer than one part cement, two parts sand. Mortar for first-class

buildings shall, for one-half their height, be no poorer than one part cement, two parts sand; above, equal parts of cement and lime, and the proper proportion of sand. Mortar for second-class buildings as are below the level of the sidewalk, shall be no poorer than the best lime mortar. Exceptions by the Superintendent may be made for mortar used in setting stone where cement will stain.

Sect. 38. The foundation walls of all dwelling houses to be hereafter erected shall be constructed of the dimensions, and in the manner following, viz.:—

For wooden houses not exceeding three stories in height, said foundation walls, if built of rubble stone, shall be not less than sixteen inches thick at the top and twenty inches thick at the bottom, the slope to be upon the outside of the wall, and shall be laid in mortar, as provided in Section thirty-seven, and if made of block stone, laid in horizontal courses, shall be laid in cement mortar; or if made of brick, shall be laid upon stone levellers, not less than twenty inches broad and twelve inches thick, and said brick foundation walls shall not be less than sixteen inches thick, or twelve inches thick with buttresses not less than twelve inches wide, as often as once in ten feet, which shall project four inches at the top, and at the bottom a sufficient distance to give a batter of one in ten.

For brick or stone houses having walls not exeeeding twenty-five feet in height above the foundations, the foundation walls shall be built in all respects the same as described in the preceding paragraph, except that they shall be four inches thicker than called for in said paragraph.

The foundation walls of brick or stone houses having walls exceeding twenty-five feet, and not exceeding forty-five feet in height above the foundation wall, if built of rubble stone, shall be not less than twenty-four inches thick at the top, and thirty inches thick at the bottom, and shall be laid in mortar, the same as provided in the second paragraph of this section; and, if made of block stone, in horizontal courses, or of brick laid in cement, upon stone levellers, not less than thirty inches broad and twelve inches thick, said foundation walls shall not be less than twenty feet thick.

The foundation walls of all brick or stone houses having exterior walls exceeding forty-five feet in height above said foundation walls, if made of rubble stone, shall be not less than thirty inches thick at the top, and thirty-six inches thick at the bottom, and shall be laid in mortar, the same as provided in the second paragraph of this section; and, if made of block stone, laid in horizontal courses, shall be laid in cement mortar; or, if made of brick, laid upon stone levellers, not less than thirty-six inches broad and sixteen inches thick, said foundation walls shall be not less than twenty-four inches thick.

Every building shall have a foundation, the bearing of which shall be not less than four feet below any adjoining surface exposed to frost, and such foundation, with the superstructure which it supports, shall not overload the material on which it rests. No round or boulder stone shall be used in the construction of any foundation walls.

Sect. 39. Foundation walls of all wooden buildings other than dwelling houses, hereafter erected with external walls not exceeding twenty-five feet in height above the foundation walls, if made of common stone shall be of same thickness as required in dwelling houses in Section thirty-eight, and foundation walls of all wooden buildings other than dwelling houses hereafter erected with external walls not exceeding thirty-five feet in height above the foundation walls, if made of common stone, shall be not less than twenty inches thick at the top, and thirty inches thick at the bottom, the slope to be upon the outside of the wall, and shall be laid in mortar, the same as hereinbefore provided for the foundations of dwelling houses; and if laid of block stone, in horizontal courses, or of brick, laid in cement, upon stone levellers, not less than thirty inches broad and twelve inches thick, they shall be not less than twenty-four inches thick. The foundation walls of all brick buildings of the height and description mentioned in this section shall be four inches thicker than above stated.

Sect. 40. The foundation of every brick building and of all permanent buildings must rest on solid ground or levelled surfaces of solid rock, brick, or upon piles, concrete or other solid substructure. The foundation walls of all wooden buildings, other than dwelling houses, hereafter erected with external walls exceeding thirty-five feet in height above the foundation walls, if made of common stone, shall be not less than twenty-four inches thick at the top, and thirty inches thick at the bottom, the slope to be upon the outside of the wall, and shall be laid in mortar, the same as hereinbefore provided for the foundation walls of dwelling houses; and, if made of block stone, laid in horizontal courses, they shall be not less than twenty-eight inches thick. The foundation walls of all brick buildings of the height and description mentioned in this section shall be four inches thicker than above stated. All foundation walls shall be laid at least four inches below the bottom of the cellar.

Sect. 41. Whenever piles are required to be driven for a foundation, except as provided in the next section, they shall be of suitable stock, driven to a firm and solid bearing, and the tops shall be cut off on a level to insure constant immersion. There shall be not less than two rows under all external and party walls, and they shall be spaced not over three feet on centres in the direction of the length of the wall, and

the number, diameter and bearing of such piles shall be sufficient to support the superstructures proposed.

Buildings over seventy feet in height shall rest where the nature of the ground permits, upon at least three rows of piles or an equivalent number of piles arranged to less than three rows. The Superintendent shall determine the grade at which the piles shall be cut.

All piles, except as provided in the next section, shall be capped with block granite levellers not less than sixteen inches thick, each stone to have a firm bearing on at least one pile in each row. The Superintendent may require any applicant for a license to ascertain by boring the nature of the ground on which he proposes to build.

Sect. 42. Wooden structures for dwellings, not exceeding two stories in height, may be built on stone or brick foundations, on piers or posts, each set on a hard bottom, but to a depth of not less than four feet below the surface of the ground, or on piles well driven to a hard bottom; said piers, posts and piles to be spaced not more than eight feet on centres, or on mud sills resting on cross-pieces of plank three inches or more in thickness, not less than four feet long and ten inches wide, placed at intervals of not more than three feet on centres; and wooden structures for manufacturing or business purposes, not exceeding three stories in height, may be built on foundations before described, upon a special license being first obtained from the Superintendent.

Sect. 43. In every brick wall in buildings hereafter erected, every ninth course of brick shall be a heading course, except in walls built with some other bond in which as much as every ninth course is a heading course, and except where walls are faced with face brick, in which case every ninth course shall be bonded with Flemish headers, or by cutting the course of the face brick, and putting in diagonal headers behind the same, or by splitting face brick in half and backing the same by a continuous row of headers. The front, rear, side, end and party walls of all brick buildings hereafter erected shall be anchored to each other every ten feet in their height by tie anchors, made of at least one and a quarter inch by three-eighths inch wrought iron.

All walls of a brick building on which the ends of beams rest shall be anchored at each tier of beams, at intervals of not more than ten feet apart, with good strong, wrought iron anchors, at least three-eighths inch by one and one-quarter inch, well built into the walls and fastened at the top of the beams; and, where the beams are supported by girders, the ends of the beams resting on the girders shall be butted together, end to end, and strapped by wrought iron straps or tie-irons, at the same distance apart, and in the same beams as the wall anchors, and shall be well fastened.

SECT. 44. All brickwork shall be of merchantable, well-shaped bricks, well laid and bedded, with well filled joints, in mortar, as required by Section thirty-seven, and well flushed up at every course with mortar. Bricks when laid shall be wet or dry, as the Superintendent may direct.

SECT. 45. All piers shall be built of good quality merchantable, well-burnt hard brick, laid in cement and sand mortar, and well wet when laid in warm weather. Brick piers under lintels, girders or columns of brick buildings shall have an iron cap at least two inches thick, the full size of the pier. Brick piers and buttresses shall be bonded, every seventh course with through courses, levelled and bedded, each course, and, where their foundations rest upon piles, a sufficient number of piles shall be driven to insure a proper support. Piles and walls shall have caps or plates, when needed, sufficient to distribute the load properly. Said piers shall not be more than eight times higher than the width of their base, unless otherwise permitted by the Superintendent.

SECT. 46. In first-class buildings all party and bearing partition walls above the foundation shall be of brick or its equivalent.

SECT. 47. The external and party walls of all dwellings of the first and second-class shall be as follows: Twenty feet wide by forty feet deep, twelve feet high, shall be not less than eight inches thick; twelve feet to sixty feet high, twelve inches; sixty feet to seventy feet high, sixteen inches to second floor, twelve inches above; seventy feet to eighty feet high, twenty inches to second floor, sixteen inches to upper floor, and twelve inches above; all walls of dwellings over eighty feet in height shall have for the upper eighty feet, the thickness required for building between seventy and eighty feet in height, and every section of twenty-five feet thereof below such upper eighty feet shall have a thickness of four inches more than is required for the section next above it.

SECT. 48. The external and party walls of all buildings of the first and second class other than dwellings shall be as follows: Above the foundations of every such building, twenty-five feet or less in height, such walls shall be not less than twelve inches thick. Between twenty-five and forty feet in height such walls shall be sixteen inches thick to the top of the second floor, and twelve inches for the remaining height. Such walls of such buildings of forty feet or over, but not over sixty feet in height, twenty inches to the top of the second floor; sixteen inches to the top of the upper floor and twelve inches for the remaining height. Such walls of such buildings of sixty feet or over, but not over eighty feet high, twenty-four inches to the top of the first floor, twenty inches to the top of the upper floor, and to within fifteen feet of the

roof and sixteen inches above. Such walls of such buildings of eighty feet or more in height shall have for the upper eighty feet the thickness required for buildings between seventy feet and eighty feet in height and every section of twenty-five feet or part thereof below such eighty feet shall have a thickness of four inches more than is required for the section next above it.

SECT. 49. External walls may, with the consent of the Superintendent, be built in part of iron or steel, and when so built may be of less thickness than is above required for external walls, provided such walls meet the requirements of this Ordinance as to strength, and provided that all constructional parts are wholly protected from heat by brick or terra cotta, or by plastering three-quarters of an inch thick, with iron furring and wiring.

SECT. 50. All buildings hereafter erected, except buildings of the first class, buildings of one story in height not exceeding twenty feet to the apex of the roof thereof, and buildings in whole or in part two stories in height not exceeding twenty feet to the apex of the roof of the one-story portion, and thirty feet to the apex of the roof of the two-story portion, exclusive of such cupolas or towers as may be approved by the Superintendent, shall be so divided by brick partition walls, of the thickness prescribed for bearing partition walls and carried thirty inches above thereof, that no space inside any such building shall exceed in area five thousand square feet, except upon the recommendation of the Superintendent of Public Buildings, and the approval of the City Council, and in no case to exceed seven thousand square feet; and no existing wall in any building, except a building of the first class, shall be removed so as to leave an area not so enclosed of more than five thousand square feet, except upon the recommendation of the Superintendent and the approval of the City Council, and in no case to exceed seven thousand square feet; provided, that in buildings having a height of not over thirty-five feet, the height above the roof of the said brick partition walls need not exceed twelve inches.

Openings or doorways in partition walls referred to in this section shall not exceed two in number for each floor, and the combined area of such openings on each floor shall not exceed one hundred square feet.

Each opening must be provided with two sets of metal-covered doors, separated by the thickness of the walls, hung to rabbeted iron frames, or to iron hinges in brick or iron rabbets; provided, this section shall not apply to churches, stables, depots or schoolhouses; and, provided, also, that no part of any such one-story or two-story building shall be placed or maintained within fifteen feet of any other building or within fifteen feet of the line or lines of the adjoining lot or lots; that the ex-

terior walls of every such one-story or two-story building in whole or in part, except brick and stone buildings, shall be covered with corrugated iron or slate; the roof shall be covered with tar and gravel, corrugated iron or slate, or any other incombustible material satisfactory to the Superintendent; and all window openings thereof shall be supplied with tinned or iron shutters; that no space inside any such two-story portion of any such building shall exceed in area five thousand square feet, except upon the recommendation of the Superintendent and the approval of the City Council, and in no case to exceed seven thousand square feet; that every such area shall be separated from the one-story portion of such building by a brick partition of the thickness prescribed for bearing partition walls, and carried to the roof of the two-story portion of such building; that openings or doorways between the two-story and one-story portions of such buildings shall not exceed two in number for each floor, and the combined area of such openings on each floor shall not exceed four hundred and fifty square feet, each opening or doorway to be furnished with two sets of metal-covered doors set and hung as hereinbefore specified; and provided, also, that the total area of any such one-story building, shall not exceed twenty-five thousand square feet, except upon the recommendation of the Superintendent and the approval of the City Council.

Sect. 51. Vaulted walls shall contain, exclusive of withes, the same amount of material as is required for solid walls, and the walls on either side of the air space in a wall carrying a floor shall be not less than eight inches thick and shall be securely tied together with ties not more than two feet apart.

Sect. 52. All walls of a first or second-class building meeting at an angle shall be united every ten feet of their height by anchors made of at least two inches by half an inch wrought iron securely built into the side or partition walls not less than thirty-six inches, and into the front and rear walls at least one-half the thickness of such walls.

Sect. 53. Party walls and partition walls of brick in all buildings other than dwelling houses hereafter erected in this city with external walls not exceeding thirty feet in height shall be not less than twelve inches thick; and in buildings having external walls exceeding fifty feet in height said walls shall be not less than twenty inches thick to the top of the second floor, nor less than sixteen inches thick to the top of the third floor, and not less than twelve inches thick for the remaining height. Partitions supporting floors shall rest upon girders, trusses, walls, or partition caps.

Sect. 54. In all brick buildings other than dwellings thirty feet in width, not having either brick partition walls or girders supported by

columns and running from front to rear, and the entire height of the building, the external and party walls shall be increased four inches in thickness for every additional twenty-five feet or fractional part thereof in the width of said building.

SECT. 55. All roof or floor timbers entering the same party wall from opposite sides shall have at least four inches solid brickwork between the ends of said timbers.

SECT. 56. All gas piping shall be done in accordance with the following scale:

Size of Tubing.	Greatest Length Allowed.	Greatest No. of Burners.
$\frac{3}{8}$ in.	20 ft.	3 burners.
$\frac{1}{2}$	30	6
$\frac{3}{4}$	50	20
1	70	35
$1\frac{1}{4}$	100	60
$1\frac{1}{2}$	150	100
2	200	200

No greater length of pipe of each size shall be allowed than that specified in the scale; and no more burners shall be taken from any size than the number above stated, even if the length of pipe is diminished.

No deviation from the above shall be allowed except in certain cases (as for instance, stables or cellars where a small number of burners are to be used in a large space), upon the written approval of the Superintendent.

No work shall be approved in which copper pipe is used.

No cement shall be allowed in any joints or upon any fittings.

No black varnished pipe shall be allowed.

Where the construction of the building will permit, all piping running under the flooring of the building shall be laid on top of the floor timbers.

In all cases the rising pipe shall be left projecting below the floor timber at least three inches, and with threaded end.

In all cases the location of meters shall be determined by the Superintendent and shall be as near as possible to the end of service pipe as it enters from the street.

SECT. 57. The ends of all wooden floor or roof beams in first and second-class buildings shall enter the wall to a depth of at least four inches, unless the wall is properly corbelled so as to give a bearing of at least four inches, and the ends of all such beams shall be so shaped or arranged that in case of fire they may fall without injury to the wall.

SECT. 58. The ends of all floor beams and rafters of a brick building entering a wall shall be cut on a splay of three inches in their width.

SECT. 59. No floor timber, header or trimmer of a brick building shall be cut into more than two inches in depth for piping without a license from the Superintendent, and no cutting shall be made in any timber at a greater distance than three feet from its support.

SECT. 60. Each floor in first or second-class buildings shall have its beams so tied to the walls and to each other with wrought iron straps or anchors at least three-eighths of an inch thick by one and one-half inches wide, as to form continuous ties across the building, not more than ten feet apart. Walls running parallel or nearly parallel with floor beams shall be properly tied once in ten feet to the floor beams by iron straps or anchors of the size above specified.

SECT. 61. First and second-class buildings hereafter built shall have floor-bearing supports not over thirty feet apart. These supports may be brick walls, trusses or columns and girders. Such brick walls may be four inches less in thickness than is required by this Ordinance for external and party walls of the same height, provided they comply with the provisions of this Ordinance as to the strength of materials, but in no case less than twelve inches thick. When trusses are used, the walls upon which they rest shall be at least four inches thicker than is otherwise required by Sections forty-eight and forty-nine, and for every addition of twenty-five feet or part thereof to the length of the truss over thirty feet.

SECT. 62. All floors shall be constructed to bear a safe weight, per superficial foot, exclusive of materials, as follows: For dwellings, tenements or lodging houses, seventy-five pounds; for stores and office buildings for light merchanical purposes and for public buildings, one hundred and fifty pounds; for storehouses, warehouses, machine shops, armories, drill rooms and riding schools, not less than two hundred and fifty pounds. The requirements shall apply to all buildings altered as well as to new buildings.

SECT. 63. In every building hereafter built or altered, there shall be posted and maintained in every room used for mechanical or mercantile purposes, the Superintendent's certificate of the weight-bearing capacity of the floor. No part of any floor of such room shall be loaded beyond its capacity as certified.

SECT. 64. Every header more than four feet long used in any building, except a dwelling, shall be hung in stirrup irons of suitable dimensions for the size of the timbers and securely joint-bolted. All tail beams shall be properly framed or hung to headers.

SECT. 65. No opening or doorway shall be cut through or formed in a party or partition wall of any building without a license from the Superintendent of Public Buildings, and every such doorway shall

have a top, bottom and sides of stone, brick or iron, and shall be closed by two doors, or sets of doors, of wrought iron, or of wood, covered with metal, with an air space between them of at least four inches, and said doors shall be hung in rabbeted iron frames, or in wooden frames, entirely covered with metal, or to iron hinges, in brick or stone rabbets, except as otherwise permitted by Section twenty-six.

SECT. 66. When openings or recesses, or both, occur in an external wall, or when buttresses are used, the piers shall be of sufficient strength to comply with the provisions of this Ordinance prescribing strength of materials, and not less in thickness than is above specified, and no other portion of the wall shall be less than twelve inches thick in buildings under seventy feet in height, or less than sixteen inches thick in buildings seventy feet or over in height.

SECT. 67. No recess, chase or flue shall be made in any party wall so deep that it will leave the thickness at the back less than eight inches at any point, and no recess, chase or flue not vertical shall be made without the special permit of the Superintendent. No vertical recess other than flues, in stacks, shall be nearer than seven feet to any other recess, unless by special permit of the Superintendent.

SECT. 68. Every metal column in a brick building shall rest on an iron plate of not less thickness than two inches. Wooden columns supporting girders and floors in such buildings shall rest on one and one-half inch iron plates, with sockets to receive the foot of the columns. Metal columns, placed one on top of another, shall have a plate at the top of each column, with projections on both sides to fit into cap and base of columns, to prevent slipping; and all columns shall have holes bored, where directed by the Superintendent, into and through the shell at right angles to the shaft, so as to show the thickness of shell. All bearing parts of columns and plates shall be turned or planed to true surfaces.

SECT. 69. Where a wall is finished with a stone cornice, the greatest weight of material of such cornice shall be on the inside of the face of the wall.

SECT. 70. All buildings hereafter erected within eight feet of any street or travelled way, shall be provided with suitable leaders for conducting the water from the roof to the ground, and, in no case shall such water be allowed to flow upon or across the surface of the sidewalk to the street, gutter, or sewer, and no person shall permit a leader or conductor from the roof of a building owned by him to be so placed or maintained as to direct a volume of water upon or across the surface of a sidewalk.

SECT. 71. All buildings over forty-five feet high shall have suitable

water-tight metallic leaders, and all buildings shall have leaders sufficient to carry all the water to the street, gutter or sewer, in such a manner as not to flow upon the sidewalk or to cause dampness on any wall, yard or area.

SECT. 72. No part of the roof of any first or second-class building hereafter built over sixty feet high, to be used for mercantile, manufacturing or storage purposes, or as a theatre, hotel, apartment house or office building, shall have a pitch of over twenty degrees. All new or renewed roofs shall be so constructed as to bear safely, in addition to the weight of the material, twenty-five pounds per superficial foot of area, covered with proper additional allowance for a horizontal wind pressure of thirty pounds per square foot. All thin glass skylights upon roofs shall be covered by a wire netting, when, in the opinion of the Superintendent, such protection is needed.

SECT. 73. The roof of every second-class building hereafter built within the fire limits shall be covered with tin, iron, slate, gravel, composition or like substantial roofing material not readily inflammable.

No structure or stand for observation purposes shall be constructed or occupied upon the roof of any building within the city.

SECT. 74. All weight-bearing metal in first and second-class buildings hereafter built shall be protected by brick, terra cotta or plastering on metal laths and furring, or other incombustible material approved by the Superintendent.

SECT. 75. Upright supports in first-class buildings hereafter erected or altered, of other material than brick below the first floor, shall be protected by a jacket of brick or terra cotta, at least four inches thick, or by a coating of plaster one inch thick, on wire or metal lathing, or other substantial fire-proof material.

SECT. 76. All chimneys hereafter erected shall be built from the ground, of hard-burnt brick, stone or other fire-proof, non-conducting materials, and shall be built plumb, or nearly so, so as to be self-sustaining; provided, however, that brick flues may be securely built into the brickwork of the walls of the building to which they are hung, when the walls are not less than twelve inches thick; and provided, also, that upon special permission first obtained from the City Council, chimneys may be built upon cast iron or hard pine columns set upon iron plates at least one and one-half inches thick, with sockets and capped at their upper ends with a metal plate at least two inches thick, and not more than two inches shorter upon either side than the corresponding sides of the chimney; or, upon permission being obtained as above, chimneys may be built upon a flooring of masonry supported by

iron beams which have secure bearings on masonry or iron at each end, the same to be constructed in all respects to the satisfaction of the Superintendent; and provided, also, that the matter of the construction of chimneys in small wooden buildings, other than dwelling houses, not more than one story and a half in height, shall be left to the decision of the Superintendent; but such chimneys must be constructed in accordance with his instructions and to his satisfaction.

SECT. 77. Every chimney flue in which soft coal or wood is burned shall be carried to a height sufficient to protect neighboring buildings from fire and smoke.

SECT. 78. All brick chimney flues shall be smoothly plastered inside with mortar from top to bottom during the course of construction, and also outside below the roofing, after having been examined and approved by the Superintendent; except that exposed portions of said chimneys when the walls of the flues are eight inches thick may be left unplastered upon the outside. All chimneys shall be topped out at least four feet above the highest point of contact with the roof with brick or stones laid in cement, and the topping out shall not have more than a two-inch projection, unless the bricks are covered by a cap of stone or other non-combustible material in one piece, properly secured and approved by the Superintendent; and in no case shall a nail be driven into the masonry of any flue.

SECT. 79. The shell of all flues for boilers, ovens and ranges set in brick shall hereafter be of brickwork eight inches thick, or its equivalent, to the top of the first floor above said boilers, ovens or ranges. Ranges set in brick and boilers shall have the outside of their flues exposed without covering, except by plastering directly upon the bricks up to the ceiling of the room, and no woodwork shall be placed on the outside of the same.

SECT. 80. No woodwork of any kind, except the roof covering, shall be placed at a less distance than one inch from the outside of the brickwork of any flue. No woodwork shall be placed at a less distance than one inch from any tin or other metal flue or pipe used or intended to be used to convey heated air, hot water or steam in any building, unless such flue or pipe be cased with a metal sleeve of one inch larger diameter than said flue or pipe, so as to permit a free circulation of air all around the same. No part of any floor timber shall be within less than two inches of any chimney. No studding or furring shall be within less than one inch of any chimney.

SECT. 81. No smoke pipe shall project through any external wall or window. No smoke pipe shall pass through any wooden partition without a soapstone ring of the thickness of the partition and extending

four inches from the pipe, or a double metal collar of the thickness of the partition, with a ventilated air space of not less than four inches around the pipe; nor shall be placed within eight inches of any wood unless such wood is plastered and protected by a metal shield two inches distant from the wood, in which case the smoke pipe shall be not less than six inches from the wood. The tops of all heating furnaces set in brick shall be covered with brick, supported by iron bars and so constructed as to be perfectly tight: said covering to be in addition to and not less than six inches from the ordinary covering of the hot air chamber. All hot air register boxes hereafter placed in the floors or partitions of buildings shall be set in soapstone or equally incombustible borders not less than two inches in width, and shall be made of tin plate, and have double pipes and boxes properly fitted to the soapstone. Hot-air pipes and register boxes shall be at least one inch from any woodwork, and register boxes fifteen inches by twenty-five inches, or larger, and their connecting pipes, shall be two inches from any woodwork. The requirements of this section may be modified or dispensed with by the Superintendent in first-class buildings.

Sect. 82. All hearths shall be supported by trimmer arches of brick or stone, or be of single stones at least six inches thick, built into the chimney and supported by iron beams, one end of which shall be securely built into the masonry of a chimney or an adjoining wall, or which shall otherwise rest upon incombustible support. The brick jambs of every fireplace, range or grate opening shall be at least eight inches wide each, and the backs of such openings shall be at least eight inches thick. All hearths and trimmer arches shall be at least twelve inches longer on either side than the width of such openings, and at least eighteen inches wide in front of the chimney breast. Brickwork over fireplaces and grate openings shall be supported by proper iron bars or brick or stone arches.

Sect. 83. No boiler to be used for steam motive power, and no furnace for melting metal or making glass shall be placed on any floor above the cellar or basement, unless the same is set upon masonry built up from the ground, or upon iron beams supported upon masonry; and in no case without a permit from the Superintendent; and all woodwork and timbers shall be removed from the floor under the same; provided, however, that furnaces for melting such metals only as fuse at a temperature not exceeding eight hundred degrees Fahrenheit and that are connected with the chimney by a sheet metal pipe exposed to view may be placed upon hollow brick or stone hearths, supported by the wooden floor of the first story or basement, the air spaces in which hearths shall be not less than three inches in perpendicular height and connected by suitable air passages with the atmosphere of the room.

SECT. 84. No stationary boiler, furnace or range set in masonry shall hereafter be placed or its location changed in any building without a license from the Superintendent, who shall prescribe such regulations for the setting or placing thereof as in his judgment the public safety may require.

SECT. 85. The top of every heating furnace not set in brick shall be kept at least sixteen inches below the beams or ceiling, with a shield of tin plate, made tight, suspended not less than two inches below the said beams or ceiling and extending at least one foot beyond the top of the furnace on all sides. If the furnace is set in brick and the ceiling is plastered or the beams are covered with metal, the top of the brickwork may be kept within not less than six inches of the ceiling or beams without the intervention of the tin plate shield.

SECT. 86. No woodwork shall be placed within one inch of any metal pipe to be used to convey heated air or steam, unless such pipe is protected by a soapstone or earthen ring or tube or a metal casing, with proper air space around the same satisfactory to the Superintendent.

SECT. 87. Every story above the second of a building subject to the provisions of Section nine of this Ordinance shall be supplied with means of extinguishing fire, consisting either of pails of water or other portable apparatus, or of a hose attached to a suitable water supply, and capable of reaching any part of such story: and such means of extinguishing fire shall be kept at all times ready for use and in good condition.

SECT. 88. No wooden flue or air duct for heating or ventilating purposes shall hereafter be placed in any building subject to the provisions of Section nine of this Ordinance, and no pipe for conveying hot air or steam in such building shall be placed, or shall remain placed, nearer than one inch to any woodwork, unless protected to the satisfaction of the Superintendent by suitable guards or casings of incombustible material.

SECT. 89. No steam or hot-water heating apparatus shall be placed in any building now or hereafter built without a license from the Superintendent, who shall prescribe such regulations for the setting or placing of the same as in his judgment the public safety may require.

SECT. 90. All floor timbers, headers and trimmers of every brick building hereafter erected or altered in which a chimney is built in a brick wall shall be placed distant at least two inches from the outside of every chimney flue, and the space between such timbers and the brickwork of the chimney shall be enclosed by a proper fire stop of incombustible material.

SECT. 91. Every chimney, flue, furnace, boiler or any heating ap-

paratus on any premises shall be so placed and constructed as in the opinion of the Superintendent shall not be unsafe or dangerous to life and limb.

SECT. 92. All hot air register boxes hereafter placed in the floors or partitions of buildings shall be set in soapstone borders not less than two inches in width, firmly set in plaster of paris or gauged mortar, or in such other protection as shall in the judgment of the Superintendent be equivalent to soapstone; shall be made of tin-plate, with a flange on the top to fit the rabbet in the soapstone, and shall have an open space of one inch on all sides, extending from the under side of the ceiling below the register, or the back side of the partition to the soapstone in the floor or partition; the outside of said space to be covered with a casing of tin-plate, tight on all sides, and extending from the under side of said ceiling or back side of said partition to and turning under the said soapstone; but register boxes of fifteen by twenty-five inches or more in size shall have a space as above of two inches.

SECT. 93. The insides of all furred brick walls of every building hereafter erected shall have a fire belt or stop composed of some fireproof material, at least six inches wide, and thoroughly set up between furrings at the top and bottom of each floor, and in each story in which stud walls or partitions are constructed, and rest on walls or other partitions; said stud walls and partitions shall have the spaces between the floor joists immediately under such walls or partitions, and between studs from the undersides of said floor joists, to a line six inches above the tops of said joists, filled solid and flush with the plastering on both sides with mortar, cement, plaster, or other incombustible material; and, if such studs or partitions shall rest upon solid timber or joists for the whole length thereof, such filling, as above described, shall be placed from the top of such timber or joists to the same height as above specified; or a strip of tin or galvanized iron, at least one inch wider than the width of said studding, and continuing under the footing of said walls or partitions, may be substituted for the filling above specified, where there is no partition or wall beneath. The exterior and interior walls of all wooden buildings hereafter erected shall have the space between the studding at the top and bottom of each story divided or separated by a fire stop, so as to check effectually the draft from one story to another, and from the vertical spaces in the walls to the horizontal passages between the floor timbers. The spaces between stringers or carriages of all wooden staircases, unless said stringers or carriages are left exposed, shall be closed at intervals not exceeding three feet by substantial stops of incombustibie material.

SECT. 94. The various forms of construction tending to create or form air passages from one story to another, such as spaces around pipes, ventilating shafts, or chimneys furred off to form breasts, in every building hereafter erected or altered, shall have a fire and smoke stop at each floor, approved by the Superintendent, which fire and smoke stop in all brick buildings shall be of incombustible material. All ventilation ducts shall be of incombustible material.

SECT. 95. Every building hereafter erected upon the line, or within five feet of the line of any street and having a slated pitch roof, sloping towards said street, shall be provided with suitable snow barriers or guards upon said roof, to prevent the snow sliding therefrom, the same to be constructed and applied to the satisfaction of the Superintendent.

SECT. 96. In every second-class building hereafter erected within the Fire Limits all exterior parts more than forty-five feet above the sidewalk, except window frame sashes and blinds, shall be made of metal, stone, brick or other incombustible material.

SECT. 97. Whenever any person is about to erect, alter or remove the exterior walls of a building, within five feet or on the line of a street, he shall cause the portion of the site of the building bordering upon the street to be closed by a proper fence, no less than four feet high; and the fence shall be made as much higher as the Superintendent shall direct, and the same shall be maintained until all liability to accident from falling material ceases.

SECT. 98. For the better protection of the lives and property of the inhabitants and other persons, it is hereby ordained that: The territory at and within the distance of three miles from the present City Hall be and is hereby established as a Fire Limit.

SECT. 99. Within the Fire Limit, so established, no structure or building of more than three stories in height, designed to be used in whole or in part as a public building, public or private institution, a public hotel, family hotel, apartment house, lodging house, tenement house, schoolhouse, church, theatre, public hall, place of assembly or place of public resort, shall be erected within twenty feet of any other structure or building, unless the exterior walls of such structure or building to be erected are made of or covered with some incombustible material.

SECT. 100. Within the Fire Limit, as established, all dwelling houses of more than two stories in height, now or hereafter erected, and within the distance of ten feet from any other building or structure, shall be furnished with a front and rear stairway, or some equally safe means of egress.

SECT. 101. Elevators or hoists for freight which do not pass the

ceiling of the first story may be constructed without fireproof enclosures above the basement. In existing buildings or in buildings hereafter erected in compliance with this Ordinance, freight and passenger elevators without fireproof enclosures may be placed in areas or hallways which are continuous and unbroken, no part being separated from another part by an intervening floor; provided, that no additional draft of air is thereby created. In such buildings such elevators may pass through the first floor of any area or hallway; provided, a fireproof enclosure be carried up to the first floor. Except as above provided, all shafts hereafter built for elevators, hoists, dumb-waiters, lifts, light and ventilating shafts or other air ducts, shall be constructed of, and if they do not pass the upper floor, their tops shall be covered with some substantial material not inflammable. All such shafts which pass the top floor shall be carried at least eighteen inches above the roof and be covered with a skylight. Such shafts already constructed, except lifts twenty-eight inches square, or of less area, and except in dwelling houses to be occupied by not more than one family, shall be lined with tin or plastered on wire lathing, or otherwise rendered non-inflammable on the inside. Such shafts hereafter built for freight and passenger elevators shall be of brick at least eight inches thick, or of metal covered on both sides with at least one inch of plaster applied immediately to the metal, or with some other equally substantial, non-inflammable, non-conducting, material. Every entrance opening in a shaft or hoistway within two and one-half feet above the floor shall be protected by sufficient rails, gates, trapdoors or such other device as shall be equivalent thereto. Every elevator shall be provided with some sufficient arrangement to prevent the falling of the car in case of accident. Overhead elevator machinery shall have underneath it a grille sufficient to protect the car from falling material. Every opening into an elevator shaft or hoistway, and every opening through a floor, other than a stairway, shall be closed when not in use. All inside elevator shaft openings, other than openings in passenger elevator shafts, shall be furnished with metal-covered doors hung to rabbeted iron frames, and shall have iron thresholds, and said doors shall be kept closed when not in use. Outside windows or openings of every elevator shaft shall have three vertical iron bars painted red, equally dividing the opening. Every part of any elevator not enclosed in a shaft shall be protected by a wire grille.

Sect. 102. No elevator shall be used in any building until after written approval by the Superintendent.

Sect. 103. In case any freight or passenger elevator is not constructed and furnished in compliance with this Ordinance, or has be-

come unsafe, the Superintendent shall post a conspicuous warning and prohibition at each entrance to such elevator. It shall, thereafter, until a new written license is given by the Superintendent, be a penal offence hereunder to operate said elevator, or remove or deface said notice. No freight or passenger elevator shall be operated for more than six months after the date of the Superintendent's license, unless a certificate signed by some elevator builder that the elevator is safe and in good order has been furnished within six months, and is posted in the car or at the entrance.

SECT. 104. No explosive or inflammable compound or combustible material shall be stored or placed under any stairway of any building, or used in any such place or manner as to obstruct or render egress hazardous in case of fire.

SECT. 105. Every building, except churches and schoolhouses, hereafter built or altered as to contain an audience or assembly hall, capable of holding eight hundred persons or more, and every theatre hereafter built, shall be a first or second-class building. In all theatres hereafter erected the level of the stage above the street level shall not exceed five feet. The audience hall and each compartment, division and gallery of every such building shall respectively have at least two independent exits, as far apart as may be. Every such exit shall have a width of at least twenty inches for every hundred persons which the hall, compartment, division or gallery from which it leads is capable of containing; provided, that two or more exits of the same aggregate width may be substituted for either of the two exits above required. None of the exits above required shall be less than five feet wide.

SECT. 106. Every building of the classes referred to in Section one hundred and five hereafter built shall have a frontage as wide as the widest part of the auditorium or assembly hall, including side passages or lobbies, the whole width and height of which frontage shall be upon a street, court, passageway or area open to the sky, and at least thirty feet wide opposite the entire frontage. Such court, passageway or area shall have an unobstructed way at least thirty feet wide, either through a first-class building without openings into any second or third-class building, or wholly open to the sky, connecting it with a public street at least thirty feet wide. There shall be at least one exit on this front which shall be in no case less than five feet in width, and of such greater width as an allowance of twenty inches for each one hundred persons which the building may at any time contain will in the aggregate require. There shall be another independent exit of the same capacity, or independent exits of the same aggregate capacity, either through a first-class building without openings into any second or third-

class building, or through a passageway open to the sky. All doors shall open outward, and shall not be so placed as to reduce the width of the passage above required. All aisles, stairways and passages in such buildings shall be of even or increasing width toward the exit, at least seven feet high throughout, without obstruction below that height properly arranged for the easy egress of the audience, and of a width in respect of each division, gallery or compartment, computed according to the above rule. No aisle or passage in such buildings, rising toward its exit, except stairways from story to story and necessary steps in galleries and balconies, shall have a gradient within the auditorium of more than two in ten, nor elsewhere of more than one in ten.

SECT. 107. In buildings of the classes referred to in Section one hundred and five hereafter built, the cut of the stair stringers shall not exceed seven and one-half inches' rise, nor be less than ten and one-half inches' tread. No winders shall be less than seven inches wide at the narrowest part. There shall be no flights of more than fifteen or less than three steps between landings. Every landing shall be at least four feet wide from step to step.

SECT. 108. All stairs and landings of all buildings of the classes referred to in Section one hundred and five hereafter built shall have throughout proper hand rails on both sides firmly secured to walls, or to strong posts or balusters. Stairways twelve feet or more wide shall have one or more intermediate rails not more than eight feet apart and properly supported.

SECT. 109. No boiler, furnace, engine, or heating apparatus, except steam or hot-air pipes and radiators, shall be located under the auditorium nor under any passage or stairway of any exit of any building of the classes referred to in Section one hundred and five.

SECT. 110. The lights for the rear of the auditorium, and for all passage and stairways of exits of every building of the classes referred to in Section one hundred and five hereafter built shall be independent of the lights of the rest of the auditorium and of the platform or stage and shall be so arranged that they cannot be turned down or off from the platform or stage.

SECT. 111. All exits from every building of the classes referred to in Section one hundred and five shall be opened for the use of every departing audience: and shall have fastenings on the inside only.

SECT. 112. No temporary seats or other obstructions shall be allowed in any aisle, passageway or stairway of a building of the classes referred to in Section one hundred and five, and no person shall be allowed to remain in any aisle, passageway or stairway of any such building during any performance.

SECT. 113. The stage of every theatre hereafter built shall be separated from the auditorium by a brick wall sixteen inches thick, which wall shall extend the entire width and height of the building, and two feet six inches above the roof, like a party wall. There shall be no openings through this wall except the curtain opening, and not more than two others, which shall be located at or below the level of the stage; these latter openings shall not exceed twenty-one superficial feet each, and shall have tinned wood self-closing doors, securly hung to rabbeted iron frames or rabbets in the brickwork. The finish or decorative features around the curtain opening of every theatre shall be of incombustible materials, well secured to masonry. All scenery, curtains and woodwork of the stage of every theatre shall be thoroughly covered, and, if practicable, saturated with fire-resisting material. No fixed portion of the stage shall be of wood.

SECT. 114. There shall be lobbies adjoining each division of the auditorium of every theatre hereafter built, separated therefrom by a partition of brick or other equally incombustible material, and sufficiently large to furnish standing room for all persons that such division may at any time contain. There shall be no openings in such partition except such as are required in Section one hundred and five, and such openings shall not be more than eight feet high.

SECT. 115. The proscenium or curtain of every theatre shall have a fire-resisting curtain of incombustible material, reinforced by wire netting, or otherwise strenghtened. If of iron, or similar heavy material, and made to lower from the top, it shall be so contrived as to be stopped securely at a height of seven feet above the stage floor; the remaining opening being closed by a curtain or valance of fire-resisting fabric. Such curtain shall be raised at the beginning, and lowered at the end of each and every performance, and shall be of proper material, construction and mechanism.

SECT. 116. All scene docks, carpenter or property shops and wardrobes of every theatre hereafter built shall be separated from the stage, auditorium and dressing-room divisions by solid brick walls, not less than twelve inches thick, with no openings to the auditorium or dressing-room divisions; and all openings to the stage shall have tinned wood self-closing doors, securely hung to rabbets in the brickwork.

SECT. 117. All rooms in theatres for the use of persons employed therein shall have at least two independent exits. All stage gaslights shall be protected by proper nettings.

SECT. 118. There shall be one or more ventilators near the centre and above the highest portion of the stage of every theatre, equal in combined area of opening to one-tenth of the area of stage floor. Every

such ventilator shall have a valve or louver so counterbalanced as to open automatically, and shall be kept closed, when not in use, by a cord reaching to the prompter's desk, and readily operated therefrom. Such cord shall be of combustible material, and so arranged that if it is severed the ventilator will open automatically.

SECT. 119. There shall be at least two two-inch high-service standpipes on the stage of every theatre, with ample provision of hose and nozzles at each level of the stage on each side, and the water shall be kept turned on during the occupation of the building by any audience. The said pipes shall have two gates, one above the other, with a proper test or waste valve; the lower gate to be kept open at all times. The proscenium opening of every theatre shall be provided with a two and one-half inch perforated iron pipe, or equivalent equipment of automatic or open sprinklers, as the Superintendent may direct, so constructed as to form when in operation a complete water curtain for the entire proscenium opening, and there shall be for the rest of the stage a complete system of fire apparatus and perforated iron pipes, automatic or open sprinklers. Said pipes or sprinklers shall be supplied with water by high-pressure service, and be at all times ready for use.

Every hall, auditorium or room of every building hereafter erected for or converted to use as a schoolhouse, factory, theatre or place of public assembly or entertainment, shall have in continuous operation while occupied a system of ventilation so contrived as to provide fifty cubic feet per minute of outer air for each light other than an electric light for each occupant.

SECT. 120. Every existing tenement or lodging house shall have in every sleeping room not communicating directly with the external air two ventilating or transom windows of not less than six square feet area each, one opening into another room or passage having an external window of not less than six square feet area, with movable sashes. No transom window shall be placed in a partition wall enclosing a main stairway.

SECT. 121. Every room in every tenement or lodging house hereafter built, and in every building hereafter altered to be used as such, shall be not less than eight feet in height in the clear in every story, except that in the attic it may be less than eight feet high for one-half of the area of the room. Every such room shall have one or more windows on an open air space with an area at least one-tenth as great as that of the room. The top of at least one window on such air space in each room shall be at least seven feet six inches from the floor, and the upper sash of the same window shall be movable.

SECT. 122. No building of which any part is used for storage or

sale of hay, straw, hemp, flax, shavings, burning fluid, turpentine, camphene or any inflammable oil, or other highly combustible substance, shall be occupied in any part as a dwelling, tenement or lodging house, except that rooms for coachmen or grooms may be allowed in private stables authorized by this act, upon special permit from the Superintendent.

SECT. 123. All stationary receptacles in a building for ashes, waste and other substances, liable, by spontaneous combustion, or otherwise, to cause a fire in a building, shall be made of incombustible material satisfactory to the Superintendent.

SECT. 124. Every lodging house containing over fifty rooms above the first floor, and every tenement house containing more than fifty sleeping rooms above the first floor, shall have at least one night watchman exclusively so employed on duty every night from nine o'clock at night until six o'clock in the morning; and every lodging house of the second or third class containing more than one hundred rooms above the first floor, and every tenement house containing more than one hundred sleeping rooms above the first floor, shall have at least two night watchmen exclusively so employed on duty every night from nine o'clock at night until six o'clock in the morning. But in the latter class of lodging and tenement houses a proper system of thermostats or automatic fire alarms, approved in writing by the Superintendent, may be substituted for one of the watchmen. In all lodging or tenement houses of either of the above classes a red light shall be kept burning at night at the head and foot of every flight of stairs, and one or more gongs shall be so placed and be of such size and number as to give the alarm throughout the house in case of fire; and in every sleeping room there shall be conspicuously posted directions for escape in case of fire. The Superintendent may make such other or further requirements for prevention of and escape from fire as may be reasonably necessary under the conditions of each case. Any innholder who fails to comply with the provisions of this section shall thereby forfeit his license.

SECT. 125. Every dwelling, tenement or lodging house, every schoolhouse and every building where operatives are employed shall have at least one water-closet or privy, and if more than twenty persons therein live, attend or are employed, there shall be an additional water-closet or privy for every twenty persons or fraction thereof; and in buildings where operatives of both sexes are employed separate accommodations shall be furnished for men and women. Privies or cesspools shall not be allowed where a sewer makes water-closets practicable. Every water-closet in every building hereafter erected for or

converted to use as a tenement house, family hotel or apartment house shall have a window opening to the outer air.

Sect. 126. No grain elevator or building for the storing or manufacture of high combustibles or explosives, or for chemical or rendering works, shall be erected, and no engine, dynamo, boiler or furnace, except exclusively for the heating of or to raise elevators in the building in which it is shall be placed in any building without a license issued under the provisions of Sections one hundred and twenty-seven, one hundred and twenty-eight and one hundred and twenty-nine.

Sect. 127. Every application for a license required by Section one hundred and twenty-six shall be filed with the Superintendent in writing, and shall set forth the location and character of the building, the size, power and purpose of the apparatus, with such further information as the Superintendent may require.

Sect. 128. Every such application shall be published in at least two weekly papers published in Cambridge; and the applicant shall also, if so directed by the Superintendent, conspicuously post on the premises a copy of an application, and deliver copies thereof to such persons as the Superintendent may direct, and shall file an affidavit with the Superintendent that the notice required has been duly given. If no objection is filed with the Superintendent before the expiration of ten days from the time of the first publication of notice, or within ten days of the delivery and first posting notice if required, the Superintendent shall, if the arrangement, location and construction of the proposed apparatus is proper, and in accordance with the terms of this Ordinance, issue a permit for the same. But if such objection is filed, the application shall be returned to the Superintendent for further consideration.

Sect. 129. The Superintendent shall in each case cause due notice to be given to all parties of the time and place of hearing, and after hearing the parties he shall issue a license under such conditions as may be prescribed, or may withhold the same.

Sect 130. Within the following described districts of the Fire Limits no building other than of the first, second and third classes shall hereafter be erected: —

First. Starting from the westerly end of Harvard bridge on Massachusetts avenue and running continuously therefrom on both sides of Massachusetts avenue to Waterhouse street, including Lafayette, Central, Putnam, Quincy and Harvard squares and within the area included between the city building lines wherever established on said Massachusetts avenue and squares and where such building lines are not established, within the area included between the lines of private ownership

adjacent to the lines of said Massachusetts avenue and squares and a line distant one hundred feet to the right and left at right angles from each and every point of said building lines and said street lines of private ownership on both sides of said Massachusetts avenue and all sides of said squares between the westerly end of Harvard bridge and said Waterhouse street as aforesaid.

Second. Starting from the westerly end of Craigie bridge and running continuously therefrom on both sides of Bridge street to and including Lechmere square, and thence running continuously westerly on both sides of Cambridge street to and including Inman square, and within the area included between the city building lines wherever established on said Bridge and Cambridge streets and said squares and where building lines are not so established, within the area included between the lines of private ownership adjacent to the lines of said Bridge and Cambridge streets and said squares and a line distant one hundred feet to the right and left at right angles from each and every point of said building lines and said street lines of private ownership on both sides of said Bridge and Cambridge streets and all sides of said squares between the westerly end of Craigie bridge and Inman square as aforesaid.

Third. Starting from the Harbor Commissioners' line on the westerly side of Charles river on the westerly end of West Boston bridge, and running continuously on both sides of Main street to and including Kendall square and Smith square, and thence running continuously westerly on both sides of said Main street to its intersection with Massachusetts avenue at Lafayette square and within the area included between the city building lines wherever established in said Main street and said squares and where building lines are not so established within the area included between the lines of private ownership adjacent to the lines of said Main street and said squares and a line distant one hundred feet to the right and left at right angles from each and every point of said building lines and said street lines of private ownership on both sides of said Main street and all sides of said squares between the Harbor Commissioners' line on the westerly end of West Boston bridge to Lafayette square as aforesaid.

Fourth. All that territory which lies south and west and is bounded northerly and easterly by the First Fire District above described, and is included on all its other sides within and is bounded westerly and southerly by the following lines: Commencing at a point in the westerly limit of said First Fire District one hundred feet northerly from the northerly line of Church street, thence running continuously southwesterly and southerly on a line distant one hundred feet at right angles from each and every point of the northerly or westerly line of said

Church street to Brattle street, and thence across said Brattle street, at right angles therewith, and then continuing in the same line to a point on property of private persons distant one hundred feet southerly from the southerly line of Brattle street; thence running easterly continuously on a line distant one hundred feet, at right angles, from each and every point of the southerly line of said Brattle street, across Brattle square to the intersection of the southerly line of Mt. Auburn street with said Brattle square; thence northeasterly continuously along and bounded by the southerly line of Mt. Auburn street to Putnam square and the southerly boundary line of the First Fire District above mentioned.

Fifth. Commencing at the intersection of the southerly line of Broadway with the westerly line of Sixth street and running continuously westerly therefrom on the southerly side of Broadway to Clark street and within the area included between the lines of private ownership adjacent to the southerly line of said Broadway and a line distant one hundred feet to the left at right angles from each and every point of said street lines of private ownership on the southerly side of Broadway, between said Sixth street and said Clark street.

Sixth. All that territory which is included between the following lines: Commencing at the intersection of the westerly line of Third street with the southerly line of Broad Canal; thence running continuously northwesterly along and bounded by the southerly line of said Broad Canal and the division line between Ward Two and Three to the southerly line of said Potter street; thence running continuously westerly along and bounded by the southerly line of said Potter street to the easterly line of Portland street; then running continuously southerly along and bounded by said easterly line of Portland street to the northerly line of Broadway; thence running continuously easterly along across Mechanics' square and bounded by the northerly line of said Mechanics' square and said Broadway to the westerly line of said Third street; thence running continuously northerly along and bounded by the westerly line of said Third street to the point of beginning.

Seventh. All that territorry which lies south and is bounded northerly by the Second Fire District, above described, and is included on all its other sides within and is bounded easterly, southerly and westerly by the following lines: Commencing at a point in the southerly limit of said Second Fire District on the westerly side of First street one hundred feet southerly from the southerly line of Cambridge street; thence running continuously southerly along and bounded by said westerly line of First street to the northerly line of Spring street; thence running continuously westerly along and bounded by said northerly line of said Spring street across said Third street to a point distant one

hundred feet westerly from the westerly line of said Third street; thence running northerly continuously therefrom on a line distant one hundred feet to the left at right angles from each and every point of the street lines of private ownership on said westerly side of Third street to the southerly line of Cambridge street and the Second Fire District above described.

Eighth: Starting from the westerly side of the location of the Fitchburg Railroad Company on Massachusetts avenue and running westerly continuously therefrom on both sides of Massachusetts avenue to Rindge avenue and within the area included between the lines of said Massachusetts avenue and a line distant one hundred feet to the right and left at right angles from each and every point of said street lines of private ownership on both sides of said Massachusetts avenue between the westerly side of said railroad location and said Rindge avenue as aforesaid.

In this Ordinance the titles Lafayette square, Central square, Putnam square, Quincy square and Harvard square, Lechmere square, Inman square, Kendall square and Smith square shall mean the respective areas included within the following boundaries, viz:

Lafayette Square.

Beginning at a point in the northerly line of Main street at its intersection with easterly line of Columbia street; thence southerly by a line at right angles to said line of Main street 70 feet to its intersection with the southerly line of Main street; thence westerly along the southerly line of Main street about 3 feet to the tangent point of a curve; thence westerly, southerly and easterly along said curve of 18 feet radius about 46.2 feet to its other tangent point in the northeasterly line of Massachusetts avenue; thence southwesterly by a line at right angles to said line of Massachusetts avenue about 91 feet to its intersection with the southwesterly line of Massachusetts avenue; thence northwesterly along said southwesterly line of Massachusetts avenue about 202 feet; thence northeasterly by a line at right angles to the southwesterly line of Massachusetts avenue 103 feet to its intersection with the northeasterly line of said avenue; thence easterly along the northeasterly line of Massachusetts avenue and the northerly line of Main street about 179 feet to its intersection with the easterly line of Columbia street at the point of beginning.

Central Square.

Beginning at a point in the southwesterly line of Massachusetts avenue at its intersection with the southerly line of Western avenue; thence westerly along said southerly line about 124 feet to its intersection

with the southeasterly line of Magazine street; thence southwesterly along said southeasterly line of Magazine street about 140 feet to its intersection with the southwesterly line of Green street; thence northwesterly along said southwesterly line of Green street about 227 feet to its intersection with the northerly line of Western avenue; thence easterly along said northerly line of Western avenue about 191 feet to its intersection with the northwesterly line of Central square; thence northeasterly along said northwesterly line of Central square about 191 feet to its intersection with the northeasterly line of Massachusetts avenue; thence southeasterly along said northeasterly line of Massachusetts avenue about 182 feet; thence southwesterly by a line at right angles to the northeasterly line of Massachusetts avenue about 103 feet to its intersection with the southwesterly line of Massachusetts avenue at the point of beginning.

Putnam Square.

Beginning at a point in the southwesterly line of Mt. Auburn street at its intersection with the westerly line of Putnam avenue; thence northerly along said line of Putnam avenue 92 feet to its intersection with the southwesterly line of Massachusetts avenue; thence northeasterly by a line at right angles to said line of Massachusetts avenue 62 feet to its intersection with the northeasterly line of Massachusetts avenue; thence southeasterly along said northeasterly line about 215 feet; thence southwesterly by a line at right angles to the southwesterly line of Massachusetts avenue about 66 feet to its intersection with said southwesterly line; thence along the southwesterly line of Massachusetts avenue and Mt. Auburn street about 190 feet to its intersection with the westerly line of Putnam avenue at the point of beginning.

Quincy Square.

Beginning at a point in the northeasterly line of Harvard street at its intersection with the easterly line of Quincy street; thence southerly along said line of Quincy street about 211 feet to its intersection with the southwesterly line of Massachusetts avenue; thence northwesterly along said southwesterly line about 300 feet; thence northeasterly by a line at right angles to said southwesterly line about 85 feet to its intersection with the northeasterly line of Harvard street; thence southeasterly along said line of Harvard street about 198 feet to its intersection with the easterly line of Quincy street at the point of beginning.

Harvard Square.

Beginning at a point in the northwesterly line of Massachusetts avenue at its intersection with the northerly line of Brattle street; thence

in a generally northerly direction along said line of Massachusetts avenue about 552 feet; thence northeasterly by a line at right angles to the said line of Massachusetts avenue about 67 feet to its intersection with the northeasterly line of Massachusetts avenue; thence southerly, easterly and northerly by a curve line of 38 feet radius about 100 feet; thence easterly by a line at right angles to the westerly line of Peabody street 66 feet to its intersection with the easterly line of Peabody street; thence southerly along said easterly line about 433 feet; thence southerly and easterly by a curved line of varying radius about 188 feet; thence southwesterly about 88 feet to the intersection of the southwesterly line of Massachusetts avenue with the northeasterly line of Dunster street; thence northwesterly along the southwesterly line of Massachusetts avenue about 218 feet to its intersection with the northwesterly line of Massachusetts avenue; thence northeasterly along said northwesterly line about 40 feet to its intersection with the northerly line of Brattle street at the point of beginning.

Lechmere Square.

Beginning at a point in the southerly line of Cambridge street at its intersection with the southwesterly line of Bridge street; thence westerly along said line of Cambridge street about 343 feet to its intersection with the northwesterly line of Lechmere square; thence northeasterly along said northwesterly line of Lechmere square about 219 feet to its intersection with the northeasterly line of Bridge street; thence southeasterly along said northeasterly line of Bridge street about 318 feet, thence southwesterly by a line at right angles to the northeasterly line of Bridge street about 77 feet to its intersection with the southwesterly line of Bridge street at the point of beginning.

Inman Square.

Beginning at a point in the southerly line of Cambridge street at its intersection with the northeasterly line of Hampshire street; thence southwesterly by a line at right angles to said line of Hampshire street 66 feet to its intersection with the southwesterly line of Hampshire street; thence northwesterly along said line of Hampshire street about 85 feet to its intersection with the southerly line of Cambridge street; thence westerly along said southerly line of Cambridge street about 121 feet; thence northerly by a line at right angle to said line of Cambridge street 66 feet to its intersection with the northerly line of Cambridge street, at the tangent point of a curve; thence easterly and northerly along said curve of 1275 feet radius about 315 feet to its other tangent point in the southwesterly line of Hampshire street; thence by a line at

right angles to said line of Hampshire street 66 feet to its intersection with the northeasterly line of Hampshire street; thence southeasterly along said northeasterly line of Hampshire street about 120 feet to its intersection with the northerly line of Cambridge street; thence easterly along said northerly line of Cambridge street 92 feet; thence southwesterly across Cambridge street about 67 feet to the point of beginning.

Kendall Square.

Beginning at a point in the northeasterly line of Broadway at its intersection with the northwesterly line of Third street; thence southeasterly along said line of Broadway about 318 feet to its intersection with the northerly line of Main street: thence by a line at right angles to said northerly line of Main street 70 feet to its intersection with the southerly line of Main street; thence westerly along said southerly line of Main street about 380 feet to its intersection with the northwesterly line of Third street produced and extended southerly; thence northeasterly along said extension and northwesterly line of Third street about 218 feet to its intersection with the northeasterly line of Broadway, at the point of beginning.

Smith Square.

Beginning at a point in the northeasterly line of Harvard street, at its intersection with the northwesterly line of Sixth street; thence southeasterly along said line of Harvard street about 224 feet to its intersection with the northerly line of Main street; thence southerly by a line at right angles to said line of Main street 70 feet to its intersection with the southerly line of Main street; thence westerly along said southerly line about 223 feet; thence northerly by a line at right angles to said southerly line about 120 feet to its intersection with the southwesterly line of Harvard street; thence northeasterly by a line at right angles to said southwesterly line of Harvard street 50 feet to its intersection with the northeasterly line of Harvard street at the point of beginning.

Sect. 131. In this Ordinance a building of the first class shall mean and be a building of non-inflammable material throughout, with floors constructed of iron or steel beams filled in between with terra cotta or other masonry arches, except that wood may be used for under and upper floors, window and door frames, sashes, doors, standing finish, hand rails for stairs, necessary sleepers bedded in concrete and for isolated furring blocks bedded in the plaster. There shall be no air space between the top of any floor arches and the floor boarding, and no air space behind any woodwork.

Sect. 132. Every building hereafter erected over seventy feet high shall be a first-class building, and this provision shall apply to all build-

ings hereafter increased in height to over seventy feet. Every building hereafter erected or enlarged as a hotel for the accommodation of guests and containing more than fifty rooms above the first floor shall be a first-class building.

SECT. 133. A building of the second class shall mean and be a building not of the first class, the external and party walls of which shall be of brick, stone, iron or other equally substantial and incombustible material. A building of the third class shall mean and include only the following structures: Wharves, sheds on wharves, not exceeding twenty-five feet in height; sheds not exceeding twenty-five feet in height to be used and occupied solely for market purposes; temporary structures not exceeding twenty-five feet in height erected and used solely to facilitate the erection of other authorized buildings and structures; grain and coal elevators; and buildings to be used and occupied solely for the storage of coal, grain, and lumber.

SECT. 134. All the external parts of all structures included in the third class of buildings in the Fire Limits shall be wholly covered with slate, tile, metal or other equally incombustible material, and the mode of construction and location of all such structures shall be subject to and conditional upon the approval of the Superintendent.

SECT. 135. No wooden building, wall or structure shall be moved from place to place on the same lot or from one lot to another within the districts described in section one hundred and thirty of this Ordinance or from without said district into either of the same, except upon a license from the Superintendent.

SECT. 136. Hereafter within the districts described in Section one hundred and thirty of this Ordinance, except as is hereafter provided, no building, wall or structure shall be erected or altered, and no building, wall or structure, damaged by fire or other casualty, shall be repaired or restored to its former condition, and no work upon or in the erection of any such building, wall or structure which impairs the strength or increases the fire risk of any such or other wall, structure or building shall be done, except upon a license from the Superintendent and in conformity with the provisions of this Ordinance.

Provided, however, that any wooden building within said districts may be altered or repaired in the manner as provided in this Ordinance in the construction of first and second-class buildings in the Fire Limits, and as may be approved by the Superintendent.

SECT. 137. Within the aforesaid districts, except as is provided in the preceding Section, any alterations made in a structure shall conform to the provisions of this Ordinance for a new structure, but if the alteration to be made is of such an extent as when done, in the opinion of

the Superintendent, to practically produce a new structure or impair the stability or increase the fire risk, then the entire structure shall be made to conform to the provisions of this Ordinance for a new structure. A building damaged by fire or other casualty within said districts may be repaired or restored so as to conform to its original condition, or may be reconstructed in certain or all of its parts, so as to conform to the requirements of this Ordinance for new buildings, as the Superintendent may specify in his license.

SECT. 138. Every brick building hereafter erected more than fifty feet in width, except schoolhouses, public buildings, dormitories of the first and second class, hotels, railroad stations and stables, shall have one or more brick or stone partition walls running from front to rear and carried up to the full height of the building: said walls may be four inches less in thickness than is called for by the provision hereinbefore made relating to the thickness of external walls for a brick building, unless the wall is used for a floor-bearing wall, in which case said walls shall be of the same thickness, as is hereinbefore required for external walls of brick buildings. These walls shall be so located that the space between any two of the floor-bearing walls of the building shall be not over fifty feet.

SECT. 139. No alteration or repairs shall be made on any third-class building within the building fire limits without a permit from the Superintendent, and no permit to increase the height or area of any such building shall be granted. No permit for the alteration or repair of a third-class building within the fire limits shall be granted if the amount of the outlay proposed exceeds fifty per cent of the cost of renewing the building; providing that within the district the Superintendent may issue a license for raising buildings for the purpose of building underpinning and foundation where increased height will not exceed three feet.

SECT. 140. In this Ordinance the following terms shall have the meanings respectively assigned to them:

"Alteration" means any change or addition.

"Apartment house" means a house divided up into set or suites of rooms.

"Cellar or basement" means the space or spaces below the level of the bottom of floor timbers of the first story.

"Chimney" shall apply to any permanent or fixed flues or passages built into any building for conveying away the products of combustion from furnaces, stoves, ranges or fireplaces.

"External wall" shall apply to that part of the outer wall of a building other than a party wall, above and other than the foundation wall.

"Foundation wall" means that portion of wall below the level of the street curb, and, where the wall is not on a street, that portion of the wall below the level of the highest ground next to the wall, but, if under party or partition walls, may be construed by the Superintendent to mean that portion below the cellar floor.

"Family hotel" means a hotel arranged more especially for the convenience and comfort of families.

"Height of a building" means the vertical distance of the highest point of the roof above the highest grade of the street or ground at the principal point of the building, provided said grade of the ground is not below the grade of the street at said point.

"Lodging house" means a building in which persons are accommodated with sleeping apartments, and includes hotels and apartment houses where cooking is not done in the several apartments.

"Party wall" means every wall used, or built in order to be used, as a separation of two or more buildings.

"Partition wall" means any interior wall of masonry in a building.

"Public building" means any building or premises used as a place of public entertainment, institution, resort or assemblage.

"Repairs" means the reconstruction or renewal of any existing part of a building, or of its fixtures or appurtenances, by which the strength or fire risk is not affected or modified, and not made, in the opinion of the Superintendent, for the purpose of converting the building in whole or in part to a new one.

"Schoolhouse" means any building or premises in which public or private instruction is afforded for not less than ten pupils at one time.

"Story of a building" means the space between the level of the bottom of the floor timbers to the level of the bottom of the floor timbers next above or below, and are numbered first, second and so on, starting from the street grade.

"Superintendent" wherever used in this Ordinance shall be construed to mean Superintendent of Public Buildings.

"Tenement house" means a building which, or any portion of which, is occupied or intended to be occupied as a dwelling by more than three families living independently of one another and doing their cooking upon the premises.

"Theatre" means a building or portion of a building in which it is designed to make a business of the presentation of dramatic, operatic or other performances or shows for the entertainment of spectators, and having a permanent stage for said performances which can be used for scenery and other stage appliances.

"Thickness of a wall" means minimum thickness of such wall.

SECT. 141. No person shall engage in or work at the business of plumbing in this city either as a master or employing plumber or as a journeyman plumber unless he shall have first personally registered his name and place of business in the office of the Superintendent and shall have received a license or certificate in accordance with the provisions of this Ordinance.

Notice of any change in the place of business of a registered plumber shall be immediately given to the Superintendent.

The words "practical plumber" as used in this Ordinance means a person who has learned the business of plumbing by working for at least two years either as an apprentice or under an agreement for instruction, and who has then worked for at least one year as a first-class journeyman plumber.

The word "journeyman" as used in this Ordinance, means one who personally does any work in plumbing which is subject to inspection under this Ordinance.

SECT. 142. Every master or employing plumber and every journeyman plumber engaged in or working at the business of plumbing in this Commonwealth prior to the tenth day of July, 1893, desiring and before proceeding to engage in or work at said business in this city, either as a master or employing plumber or as a journeyman plumber, shall personally register his name and address at the office of the Superintendent and shall state, after being sworn, where and how long he has been engaged in or has worked at said business, and whether as a master or employing plumber or as a journeyman plumber.

The Superintendent, if satisfied that the person so registered was actually engaged in or working at said business prior to said date, shall thereupon issue to him a certificate setting forth that he was engaged in or working at the business of plumbing either as a master or employing plumber or as a journeyman plumber as the case may be, prior to the tenth day of July, 1893, and authorizing him to engage in or work at said business either as a master or employing plumber, or as a journeyman plumber.

SECT. 143. Any person not engaged in or working at the business of plumbing prior to the tenth day of July, 1893, and desiring to engage in or work at the business of plumbing, either as a master or employing plumber or as a journeyman plumber in this city, shall apply to the Superintendent, and shall, at such time and place as may be designated by the Board of Examiners hereinafter provided for, to whom such application shall be referred, be examined as to his qualifications for such business.

SECT. 144. In the case of a firm or corporation, the examination

and licensing of any one member of the firm or the manager of the corporation shall satisfy the requirements of this Ordinance.

SECT. 145. There shall be in this city a Board of Examiners of Plumbers, consisting of the Chairman of the Board of Health and the Superintendent, who shall be members *ex officio* of said board, and serve without compensation, and a third member, who shall be a practical plumber of at least five years' continued practical experience either as a master or as a journeyman during the years next preceding the date of appointment. Said third member shall be appointed by the Board of Health for the term of one year from the first day of May in the year of appointment, and thereafter annually before the first day of June, and shall be allowed a sum not exceeding five dollars for each day of actual service, to be paid from the city treasury.

SECT. 146. Said Board of Examiners shall as soon as may be after the appointment of said third member, meet and organize by the selection of a Chairman, and shall then designate the times and places for the examination of all applicants desiring to engage in or work at the business of plumbing. Said Board shall examine said applicants as to their practical knowledge of plumbing, house drainage and plumbing ventilation, and if satisfied of the competency of the applicant, shall so certify to the Superintendent, who shall thereupon issue a license to such applicant, authorizing him to engage in or work at the business of plumbing, either as master or employing plumber, or as a journeyman plumber. The fee for a license for a master or employing plumber shall be two dollars; for a journeyman plumber it shall be fifty cents. Said licenses shall be renewed annually upon the payment of a fee of fifty cents. A license issued by a Board of Health or Superintendent having competent jurisdiction in some other locality within the Commonwealth, may be renewed by the Superintendent in case the person, firm or corporation to whom the license was issued removes from such jurisdiction and desires to engage in or work at the business of plumbing in this city.

SECT. 147. The Superintendent shall appoint one or more inspectors of plumbing, who shall be practical plumbers of at least five years' continued practical experience either as masters or as journeymen during the years next preceding the date of appointment, and who shall hold office until removed by said Superintendent for cause which must be shown. All such Inspectors shall before appointment be subjected to an examination before the Civil Service Commission. Said Inspectors shall, under the direction of the Superintendent inspect all plumbing work for which permits are hereafter granted, in process of construction, alteration or repair; and shall report to said Superintend-

ent all violations of any law, Ordinance or by-law relating to plumbing work, and also perform such other appropriate duties as may be required by the Superintendent.

SECT. 148. No plumbing work shall be done except in the case of repair of leaks, without a permit being first issued therefor and approval of the same by the Superintendent, and no such permit shall be issued unless and until the person, firm or corporation proposing to do the work shall file in the office of the Superintendent upon blanks provided for the purpose, a notice and a particular description of the work to be performed.

SECT. 149. No pipes, tanks, faucets, valves or other fixtures by and through which waste water or sewage is used and carried, shall be placed in any building in the city except in accordance with plans which shall be approved by the Superintendent.

SECT. 150. The owner of every building shall have its sewage conducted into and separately and independently connected with a common sewer whenever there is a common sewer near by in the street adjoining the premises upon which such building stands, or with a proper and sufficient drain connected thereto outside of the building, and if there is no such sewer accessible, into a proper cesspool. And whenever in the opinion of the Board of Health it may be necessary as a health measure, upon its order, any drain and any connection with a common sewer, and any cesspool shall be reconstructed by such owner at his expense.

SECT. 151. Such portions of house drains as are outside of buildings, and are at a distance more than five feet beyond the foundation walls shall be constructed of iron or vitrified drain pipe.

SECT. 152. Such portions of house drains and connecting ventilating pipes as are within buildings, and also such portions as pass through the walls and for a distance therefrom of at least five feet shall be constructed of extra heavy cast-iron pipe, of the following weights:

2 inches, $5\frac{1}{2}$ pounds.
3 inches, $9\frac{1}{2}$ pounds.
4 inches, 13 pounds.
5 inches, 17 pounds.
6 inches, 20 pounds.
8 inches, $33\frac{1}{2}$ pounds.
10 inches, 45 pounds.
12 inches, 54 pounds.

Lead pipes may be used, however, for the connections of wash bowls and bath tub wastes.

SECT. 153. Drain and connecting ventilating pipes shall be of suffi-

cient size, and shall be properly secured by irons to walls, or laid in trenches to uniform grade, or suspended to floor timbers by strong iron hangers. Every drain pipe shall be provided with a running trap of a size not less than the internal diameter of the drain with heavy brass clean-outs and a "Y" branch with heavy brass clean-out on the sewer side of the trap, and shall have a proper fall. Drain pipes shall be carried above the roof, open and undiminished in size, and in a sufficient height, not less than two feet above the roof, and not less than five feet above the top of any window within fifteen feet. Changes in direction shall be made with curved pipes, and all connections with horizontal or vertical pipes shall be made with Y branches. All drain pipes and other fixtures shall be exposed to sight where practicable, within the building, and shall not be exposed to pressure where they pass through walls. Such pipes and other fixtures shall not be covered or concealed from view until approved by the Superintendent, who shall examine the same within two working days after notice that they are ready for inspection.

SECT. 154. Joints in iron soil pipes, drain and waste pipes shall be oakum packed, thoroughly calked with moulten lead and made tight. Joints in lead pipes shall be wiped solder joints unless otherwise permitted by the Superintendent. Connections of iron and lead pipes shall be by means of brass calking nipples, and the lead shall be jointed to the brass by wiped joints, and the nipple shall be securely calked into the iron pipe or fitting. Wiped "cup" joints shall not be deemed wiped joints within the meaning of this section.

SECT. 155. The waste pipe of each and every sink, basin, bath tub, urinal, water closet, slop-hopper, and of each set of trays or other fixtures, shall be furnished with a separate trap, which shall be placed within one foot of the fixtures served, except as hereinafter provided. One trap shall be permitted to serve for one set of wash trays and a sink, or one bath tub and a wash bowl, provided that the distance between the outlets of said fixtures is not greater than two feet, and the diameter of the trap is not less than four inches. Traps shall be protected from siphonage or air pressure by special cast iron pipes of a size not less than the waste pipes they serve placed outside or below the trap. Lead or galvanized wrought iron air pipes not less than one and one-half inches may be used only when they are exposed to view. Air pipes for water-closet traps shall be of two-inch bore, if thirty feet or less in length, and of three-inch bore, if more than thirty feet in length. Air pipes shall be run as direct as practicable. Two or more air pipes may be connected together with a drain pipe, but in every case of connection with a drain pipe such connection shall be above the upper fixtures of the building.

SECT. 156. No chimney or hot flue or shaft constructed of sheet iron, brick or cement shall be used as a ventilator for a trap or drain pipe. Vent pipes shall be constructed of the same material, and in accordance with the provisions of the Ordinance governing the construction of drain pipes, and no vent pipe shall be constructed or placed in such manner that it may become trapped or filled by water from condensation or otherwise.

Bow vents shall be constructed to the satisfaction of the Superintendent. The continuation of a soil pipe stack past an upper water-closet or any single isolated fixture shall be deemed to be trap ventilation if said fixture is within two feet of ventilation pipe stack.

SECT. 157. Each water closet and every line of water closets on the same floor shall be supplied with water from a tank or cistern of a capacity not less than four gallons to each closet. This requirement shall not apply to water closets substituted for privy vaults where they are outside of buildings, but such water closets may receive their supply directly from the main, with such fixtures as may be approved by the Superintendent and the Water Board and Board of Health. No pan-closet shall be permitted, and no sluice vault or water closet constructed of brick, cement or stone.

SECT. 158. Each water closet and urinal in a new building other than a stable or building used for storage purposes, shall be locally vented into a hot chimney or flue when deemed practicable by the Superintendent.

SECT. 159. Drip or overflow pipes from safes under water closets and other fixtures or from tanks or cisterns, waste pipes from refrigerators or other receptacles where food is stored, shall not be connected with a drain, sewer pipe, soil pipe or other waste pipe, and shall be run to some place in open sight.

SECT. 160. No steam exhaust pipe shall be connected with a drain or sewer pipe, soil pipe or other waste pipe unless the exhaust pipe shall be provided with a sufficient condenser, and unless the exhaust pipe connects with such drain or sewer pipe, soil pipe or other waste pipe at a point between the running trap, required by Section one hundred and fifty-two, and the sewer or cesspool.

SECT. 161. Water pipes in exposed places shall be properly protected from frost.

SECT. 162. Each drain water leader connected with soil or drain pipes, or a sewer shall be separately trapped, and every portion thereof within a building and every portion which passes through the wall and for a distance therefrom of at least one foot, shall be constructed of the same material and in the same manner as other drain pipes. They shall

in no event be used to drain other than rain water. Leader traps shall be provided with heavy brass clean-outs. The main soil pipe stack may be used as a rain-water leader, provided it has a copper collar with a brass nipple soldered on and caulked to the iron pipe or fittings with oakum and molten lead, provided the ventilation pipes are carried independently through the roof and increased to three inches at this point.

SECT. 163. No cellar bottom or area shall be connected with a public sewer only under such conditions as the Superintendent shall in each particular case provide.

SECT. 164. All drainage and ventilation pipes together with waste and ventilation lead branches, shall be given the water test, by the plumber in the presence of and approval in writing by an Inspector of Plumbing, and all leaking or otherwise defective work removed or repaired. Twenty-four hours' notice that the work is ready for test shall be sent to the office of the Superintendent.

SECT. 165. Repairs upon soil or vent pipes consequent upon damage from fire, removal or other cause, shall, in the discretion of the Superintendent, be submitted to the water test.

SECT. 166. When the pipes, traps, local vents, etc., are in position and the work sufficiently advanced for inspection the plumber will so notify the Superintendent, giving twenty-four hours' written notice, and no work shall be covered until the same is approved by an Inspector of Plumbing. All defective or work otherwise not in accordance with the City Ordinances shall be removed.

SECT. 167. A grease trap shall be constructed under the sink of every hotel, eating house, restaurant or other public cooking establishment, so as to be easily accessible for inspection and cleaning.

SECT. 168. Any person violating any provision in the next twenty-seven preceding sections of this Ordinance relative to plumbing shall be punished by a fine not exceeding fifty dollars for each and every violation thereof.

SECT. 169. The Superintendent may also revoke the license of any person issued under this Ordinance for any such violation, and may also forbid any person violating any provision of this Ordinance and holding a license under the same, or from any other city or town, to engage in or work at the business of plumbing in this city for a period not exceeding one year. Any person engaging in or working at the business of plumbing after and while he has been forbidden so to do under this section shall be subject to a fine not exceeding one hundred dollars for every such offence.

SECT. 170. The next twenty-nine preceding sections of this Ordinance relative to plumbing shall apply to all persons who are now or

may be hereafter learning the business of plumbing when they are sent out to do the work of a journeyman plumber.

SECT. 171. Any person now holding an appointment as Inspector of Plumbing may retain his position, and without further examination be deemed to have been appointed under this Ordinance.

SECT. 172. Except in cases in which other provisions are made herein or by statutes, any person violating any provision of this Ordinance shall be punished by a fine not exceeding one hundred dollars for each and every such offence.

SECT. 173. This ordinance, in so far as its provisions are the same in effect as those of previously existing ordinances, shall be construed as a continuation of those ordinances; it shall not affect any act done, any right accruing, any penalty incurred, any suit, prosecution or proceeding pending, or the tenure of office of any person holding office at the time when it takes effect; but, subject to the aforesaid limitations, Chapter thirteen of the Revised Ordinances of 1892, all ordinances amendatory thereof and supplementary thereto; the ordinances relating to Fire Limits and to the construction of buildings therein, approved respectively Dec. 5, 1894, June 21, 1895, and Sept. 25, 1895, all ordinances amendatory thereof and supplementary thereto; an ordinance relating to plumbing approved Nov. 23, 1893, all ordinances amendatory thereof and supplementary thereto; are all hereby repealed.

[*Approved July* 1, 1897, *and Oct.* 20, 1897.*]

An Ordinance in Relation to the Ringing of Bells and Gongs in the Public Streets.

Be it ordained by the City Council of the City of Cambridge, as follows:—

SECTION 1. No person in any public street of the city shall ring a bell or gong, between the hours of 10 o'clock P. M., and 6 o'clock A. M., except as a warning of danger.

SECT. 2. Whoever violates any provision of this ordinance shall be liable to a penalty of not more than twenty dollars for each offence.

[*Approved July* 28, 1897.]

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*The ordinance as here printed includes the ordinance approved July 1, 1897, and also the one approved October 20, 1897.

The latter ordinance was an amendment to Section 48 of the one first approved, and is here publlshed in its amended form.

An Ordinance to Establish Fire Lines and to Prevent Encroachment upon the Same.

Be it ordained by the City Council of the City of Cambridge, as follows:—

SECTION 1. At any place or places in this city at which a fire is or has been in progress no person other than firemen, policemen and other parties duly authorized shall advance, enter or remain within or beyond any barrier, line or limit of approach to said place or places which barrier, line or limit has been established or located by roping off or otherwise by order of the Chief of the Fire Department, during the time and at the place at which said barrier, line or limit of approach is maintained.

SECT. 2. Said barrier line or limit of approach so established or located as provided in section one shall be known as and called a "fire line."

SECT. 3. Any person violating any of the provisions of this ordinance shall be liable to a penalty not exceeding twenty dollars for each offence.

[*Approved Dec.* 29, 1897.]

An Ordinance in Amendment of an Ordinance Entitled Engineering.

Be it ordained by the City Council of the City of Cambridge, as follows:—

Section 6 of Chapter 10 of the Revised Ordinances of 1892 is hereby amended by adding thereto the following:—

"It shall be his duty to ascertain the proper foundation grade for the superstructure of every building to be erected by the city, and immediately thereafter to furnish all necessary information in relation thereto to the Superintendent of Public Buildings."

[*Approved Dec.* 29, 1897.]

An Ordinance Regulating the Sale and Delivery of Ice.

Be it ordained by the City Council of the City of Cambridge, as follows:—

SECTION 1. Every person, firm or corporation before selling or delivering ice in this city after the first day of February, A. D. 1898, shall prior to such sale or delivery register at the office of the Board of Health the name and location of the body or bodies of water from which said ice so to be sold or delivered has been cut, or from which the water has been taken for its manufacture. Such registration shall be subscribed and sworn to by the person so proposing to sell or cause to be delivered said ice, or in the case of a firm, by one of the members of the firm, or in the case of a corporation by the president, general manager or one of the board of directors of the corporation.

Sect. 2. Every person, firm or corporation who sells, delivers or causes to be delivered ice in this city after the first day of February, A. D. 1898, shall permit the Board of Health and its inspectors at all reasonable times to have access to and freely examine the ice intended for such sale or delivery, and shall permit samples to be taken by said Board or its inspectors for the purpose of analysis.

Sect. 3. The Board of Health shall investigate the sources of supply of ice so sold or delivered and cause inspection and analysis to be made of the ice from said sources. And if upon such investigation, inspection and analysis and upon hearing, it shall deem and adjudge ice derived from any source to be impure and injurious to the public health it may prohibit the sale or delivery in this city of such ice or of any other ice which has been intermingled with ice from such source. Notice of such prohibition shall be given in the manner provided by law for giving notice of the regulations of the Board of Health, and such notices shall be deemed legal notice to all persons.

Sect. 4. Any person, firm or corporation after the first day of February, A. D. 1898, who shall sell or deliver or cause to be sold or delivered or shall have in his, their or its possession with intent to sell or deliver in this city ice the source of which has not been registered as above provided, or ice the sale and delivery of which has been prohibited and notice thereof given as above provided, or who shall violate any of the provisions of section two of this ordinance, shall be liable to a penalty not exceeding twenty dollars for each offence.

[*Approved December* 29, 1897.]

An Ordinance Repealing an Ordinance in Relation to Ice for Domestic Purposes.

Be it ordained by the City Council of the City of Cambridge, as follows:—

An Ordinance approved January 1st, 1896, "In Relation to Ice for Domestic Uses," and adopted as Chapter 39 of the Revised Ordinances of 1892, is hereby repealed.

[*Approved February* 2, 1898.]

An Ordinance in amendment of an Ordinance in Relation to Fire Department.

Be it ordained by the City Council of the City of Cambridge, as follows:—

Section 10, of Chapter 11 of the Revised Ordinances of 1892, is hereby amended as follows: —

In the last line by adding the words: "In the absence of the engineman the assistant engineman shall have the care of the engine house and all city property therein."

[*Approved Februarg* 26, 1898.]

MAYORS OF THE CITY OF CAMBRIDGE

From 1846 to 1898 inclusive

James D. Green	from	May,	1846,	to April,	1848
Sidney Willard	"	April,	1848,	to April,	1851
George Stevens	"	April,	1851,	to April,	1853
James D. Green	"	April,	1853,	to April,	1854
*Abraham Edwards	"	April,	1854,	to January,	1855
Zebina L. Raymond	"	January,	1855,	to January,	1856
John Sargent	"	January,	1856,	to January,	1860
†James D. Green	"	January,	1860,	to July 24,	1861
‡Charles Theo. Russell	"	July 31,	1861,	to January,	1863
George C. Richardson	"	January,	1863,	to January,	1864
Zebina L. Raymond	"	January,	1864,	to January,	1865
J. Warren Merrill	"	January,	1865,	to January,	1867
Ezra Parmenter	"	January,	1867,	to January,	1868
Charles H. Saunders	"	January,	1868,	to January,	1870
Hamlin R. Harding	"	January,	1870,	to January,	1872
Henry O. Houghton	"	January,	1872,	to January,	1873
Isaac Bradford	"	January,	1873,	to January,	1877
Frank A. Allen	"	January,	1877,	to Jannary,	1878
Samuel L. Montague	"	January,	1878,	to January,	1880
James M. W. Hall	"	January,	1880,	to January,	1881
James A. Fox	"	January,	1881,	to January,	1885
William E. Russell	"	January,	1885,	to January,	1889
Henry H. Gilmore	"	January,	1889,	to January,	1891
Alpheus B. Alger	"	January,	1891,	to January,	1893
William A. Bancroft	"	January,	1893,	to January,	1897
Alvin F. Sortwell	"	January,	1897.	Now in office.	

* Municipal year changed. † Resigned. ‡ First elected by the City Council.

PRESIDENTS OF THE BOARD OF ALDERMEN

1888 Edward W. Hincks.
1889 John H. Corcoran.
1890 Alvin F. Sortwell.
1891 William A. Bancroft.
1892 William A. Bancroft.
1893 John R. Fairbairn.
1894 John G. Thorogood.
1895 John R. Fairbairn.
1896 John R. Fairbairn.
1897 Russell Bradford.
1898 Russell Bradford.

PRESIDENTS OF THE COMMON COUNCIL

1846 Isaac Livermore.
1847 John Sargent.
1848 John C. Dodge.
1849 Samuel P. Heywood.
1850 Samuel P. Heywood.
1851 John S. Ladd.
1852 John Sargent.
1853 John Sargent.
1854 John C. Dodge.
1855 Alanson Bigelow.
1856 Ezra Ripley. Resigned January 31.
George S. Saunders. Elected January 31.
1857 George S. Saunders.
1858 James C. Fisk.
1859 James C. Fisk.
1860 Hamlin R. Harding.
1861 Hamlin R. Harding.
1862 Jared Shepard. Resigned September 17.
Knowlton S. Chaffee. Elected September 24.
1863 George S. Saunders.
1864 George S. Saunders.

1865 John S. March.
1866 John S. March.
1867 Marshall T. Bigelow.
1868 Knowlton S. Chaffee. Resigned February 4.
Henry W. Muzzey. Elected February 4.
1869 Henry W. Muzzey.
1870 Joseph H. Converse.
1871 Joseph H. Converse.
1872 Alvaro Blodgett.
1873 Alvaro Blodgett. Resigned June 17.
Francis H. Whitman. Elected June 17.
1874 George F. Piper.
1875 George F. Piper.
1876 Frank A. Allen.
1877 Perez G. Porter.
1878 George S. Saunders.
1879 George S. Saunders.
1880 Charles Walker.
1881 Charles Walker.
1882 George H. Howard.
1883 George H. Howard.
1884 George H. Howard.
1885 Cornelius G. H. Bennink.
1886 John H. Corcoran.
1887 John H. Corcoran.
1888 Alvin F. Sortwell.
1889 Edward A. Bingham.
1890 Edward A. Bingham.
1891 Edward C. Wheeler.
1892 Herbert A. Chase.
1893 J. Henry Russell.
1894 Charles M. Conant.
1895 John L. Odiorne.
1896 John L. Odiorne.
1897 Albert S. Apsey.
1898 George E. Saunders.

GOVERNMENT OF THE CITY OF CAMBRIDGE 1898

Mayor.

HON. ALVIN F. SORTWELL, 48 Highland Street.

Board of Aldermen.

President.

RUSSELL BRADFORD.

Ward One.

RUSSELL BRADFORD	375 Harvard St.
WALTER C. WARDWELL	465 Broadway.

Ward Two.

JEREMIAH F. DONOVAN	108 Inman St.
CLEMENT G. MORGAN	49 Lincoln St.

Ward Three.

JOHN J. AHERN	62 Fifth St.
JOHN T. SHEA	119 Third St.

Ward Four.

EBEN H. GOOGINS	91 Franklin St.
WARREN F. SPALDING	140 Chestnut St.

Ward Five.

WATSON G. CUTTER	37 Linnæan St.
ISAAC MCLEAN	2218 Massachusetts Ave.
JAMES A. WOOD	1691 Massachusetts Ave.

EDWARD J. BRANDON, *Clerk.*

FRANCIS L. PRATT, *Messenger.*

Regular Meetings on Tuesday Evenings at 8 o'clock.

Common Council.

President.

GEORGE E. SAUNDERS.

Ward One.

WILLIAM F. BROOKS	35 Aberdeen Ave.
A. SHERBURNE K. CLARKE	12 Plympton St.
JAMES D. HILL	29 Putnam Ave.
GEORGE E. SAUNDERS	5 Concord Ave.

Ward Two.

WILLIAM J. CAMPBELL	66 Tremont St.
ALBERT B. LONG	5 Ellsworth Park.
FRANK MCLAUGHLIN	122 Tremont St.
JOHN E. SMITH	241 Norfolk St.
WILLIAM M. WADDEN	125 Hampshire St.

Ward Three.

JAMES T. BARRETT	8 Parnell St.
GEORGE H. DINAN	66 Spring St.
FREDERICK A. GILLIGAN	145 Otis St.
JAMES J. SCULLY	74 Otis St.

Ward Four.

EDGAR P. BAKER	33 Pearl St.
ALFRED E. HUGHES	16 Upton St.
WILLIAM P. DAVIS	58 Putnam Ave.
HUGH E. MCGOLDRICK	131 Franklin St.
HAMILTON H. PERKINS	126 Magazine St.

Ward Five.

HANS L. CARSTEIN	45 Cogswell Ave.
ALFRED C. TURNER	9 Lancaster St.

EDWARD A. COUNIHAN, *Clerk.*

CHARLES M. JONES, *Page.*

Regular Meetings on Tuesday Evenings at 8 o'clock.

COMMITTEES OF THE CITY COUNCIL.

Joint Standing Committees.

Accounts. Aldermen Googins and McLean; Councilmen Baker, Wadden and Barrett.

Almshouse. Aldermen Googins and McLean; Councilmen Brooks, Gilligan and Carstein.

Assessors' Department. Alderman Ahern; Councilmen Hill and Barrett.

City Engineering. Aldermen Shea and McLean; Councilmen Turner, Baker and Campbell.

Claims. President Bradford, Aldermen Cutter, Morgan and Spalding; President Saunders, Councilmen Clark, McGoldrick, Dinan, Long and Turner.

Electric Wires. Aldermen Googins and McLean; Councilmen Smith, McGoldrick and Hughes.

Finance. President Bradford, Aldermen Cutter, Spalding and Ahern; President Saunders, Councilmen Perkins, Smith, Brooks, Scully and Carstein.

Fire Department. Aldermen Wood and Donovan; Councilmen Scully, Davis and Wadden.

Health. Aldermen Googins and McLean; Councilmen Davis, Brooks and Scully.

Lamps. Aldermen Wood and Donovan; Councilmen Long, Baker and Dinan.

Legislative Matters. President Bradford, Aldermen Spalding and Shea; President Saunders, Councilmen McLaughlin, Hill and Wadden.

Ordinances. Aldermen Morgan and Spalding; Councilmen Perkins, Clark and Hill.

Parks. Aldermen Cutter and Spalding; Councilmen McGoldrick, Clark and Carstein.

Printing. Aldermen Googins and McLean; Councilmen Davis, Campbell and Turner.

Public Instruction. Aldermen Shea and McLean; Councilmen Baker, Smith and Gilligan.

Public Property. Aldermen Wardwell and Ahern; Councilmen Smith, Turner and Campbell.

Roads and Bridges. Aldermen Wardwell and Shea; Councilmen McLaughlin, Hughes and Barrett.

Rules and Orders. Aldermen Morgan and Donovan; Councilmen Dinan, McLaughlin and Davis.

Water Supply. Aldermen Wood and Donovan; Councilmen Brooks, Perkins and Gilligan.

Standing Committees of the Board of Aldermen.

Bonds. Aldermen Shea, Wardwell and Cutter.

Claims. President Bradford, Aldermen Cutter, Morgan and Spalding.

Elections and Returns. Aldermen Donovan, Cutter and Ahern.

Fire Department. Aldermen Wood, Donovan and Ahern.

Health. Aldermen Googins, McLean and Spalding.

Licenses. Aldermen Wood, Googins and Morgan.

Parks. Aldermen Cutter, Spalding and Ahern.

Police. President Bradford, Aldermen Wood and Shea.

Roads and Bridges. Aldermen Wardwell, Shea and Donovan.

Rules and Orders. Aldermen Morgan, Cutter and McLean.

Sewers and Drains. Aldermen Wardwell, McLean and Donovan.

Soldiers' Aid. Aldermen Wood, Wardwell, Ahern, Morgan and Googins.

Street Railways. Aldermen McLean, Morgan and Googins.

Standing Committees of the Common Council.

Bills in the Second Reading. Councilmen Dinan, Carstein and Long.

Elections and Returns. Councilmen Hughes, McLaughlin and Scully.

Enrolled Ordinances. Councilmen McGoldrick, Gilligan and Campbell.

Joint Special Committees.

Recommendations in Mayor's Inaugural Address. Aldermen Wood and Donovan; Councilmen Hill, Scully and Davis.

Consideration of Report of State Commission on Taxation. President Bradford and Aldermen Spalding and Shea; President Saunders and Councilmen Clark, Baker and Dinan.

Consideration of expediency of a transfer of House Offal Division to Street Department. Aldermen Wardwell and McLean; Councilmen Brooks, McGoldrick and McLaughlin.

Central Fire Alarm Station. Aldermen Googins and Donovan; Councilmen Smith, Davis and Gilligan.

New Bridges across Charles River. President Bradford and Aldermen Spalding and Morgan; President Saunders and Councilmen Scully, Perkins and Campbell.

Change in Somerville Boundary Line. Aldermen Cutter and Donovan; Councilmen Wadden, Barrett and Carstein.

Accommodations to Street Railway Co. Patrons at Harvard Square. President Bradford and Aldermen Cutter and McLean; President Saunders and Councilmen Turner, Hill and Hughes.

John McDuffie, *Clerk of Committees.*

City Clerk.

Edward J. Brandon.

Assistant City Clerk.

Albert M. Pear.

City Messenger.

Francis L. Pratt.

City Treasurer.

William W. Dallinger.

City Auditor.

Harry T. Upham.

City Solicitor.

Gilbert A. A. Pevey.

City Engineer.

Lewis M. Hastings.

Chief of Police.

Lothrop J. Cloyes.

Chief Engineer of Fire Department.

Thomas J. Casey.

Superintendent of Streets.

Charles A. Brown.

Superintendent of Public Buildings and Inspector of Buildings.

William H. Gray.

Superintendent of Sewers.

Theodore L. Pike.

Superintendent of Lamps.

Charles F. Hopewell.

City Physician.

Lewis L. Bryant, M.D.

Inspector of Wires.

Charles F. Hopewell.

Inspector of Milk.

Frank A. Dunbar, M.D.

Inspector of Vinegar.

Frank A. Dunbar, M.D.

Sealer of Weights and Measures.

Albert F. Roberts.

Bridge Commissioner.

William J. Marvin.

Harbor Master.

William J. Marvin.

Inspector of Animals and Provisions.

Charles E. Hadcock, M.D.V.

Surveyor of Highways.

His Honor, the Mayor.

School Committee.

Alvin F. Sortwell, Mayor, *Chairman, ex officio.*
(Term, three years.)

WARD 1.

Elizabeth Q. Bolles (term expires 1898).
Frank W. Taussig (term expires 1899).
William Taggard Piper (term expires 1900).

WARD II.

George W. Bicknell (term expires 1898).
Robert O. Fuller (term expires 1899).
Caroline L. Edgerly (term expires 1900).

WARD III.

Ellen M. Coburn (term expires 1898).
Edward B. Malley (term expires 1899).
Joseph J. Kelly (term expires 1900).

WARD IV.

Frank C. Chamberlain (term expires 1898).
Jenny H. S. Lansing (term expires 1899).
Charles F. Wyman (term expires 1900).

WARD V.

Frederic W. Taylor (term expires 1898).
George P. Johnson (term expires 1899).
Carolyn P. Chase (term expires 1900).

Secretary.

Sanford B. Hubbard.

Superintendent of Schools.

Francis Cogswell.

Board of Health.

E. Edwin Spencer, M.D., *Chairman.*
(Term, three years.)

Addison C. Burnham (term expires 1899).
Charles Harris (term expires 1900).
E. Edwin Spencer, M.D. (term expires 1901).

Clerk.

James B. Soper.

Medical Inspector.

Edwin Farnum, M.D.

Board of Assessors.

Andrew J. Green, *Chairman.*
(Term three years.)
Andrew J. Green (term expires 1898).
Joshua G. Gooch (term expires 1899).
John M. Davis (term expires 1900).
Clerk of the Board.
John M. Davis.
Assistant Assessors.
Warren Ivers. Daniel B. Shaughnessy.
George H. Munroe. Arthur M. Stewart.
Edwin K. Hall.

Overseers of the Poor.

William W. Burrage, *Chairman.*
(Term, five years.)
Alexander Millan (term expires 1898).
William W. Burrage (term expires 1899).
Charles Bullock (term expires 1900).
Charles Walker (term expires 1901).
Stephen Anderson (term expires 1902).
Secretary.
David P. Muzzey.
Visitor.
Vespasian Danforth.
Superintendent of Almshouse.
Martin L. Eldridge.

Cemetery Commissioners.

George S. Saunders, *Chairman.*
(Term, three years.)
Herbert A. Chase (term expires 1899).
George S. Saunders (term expires 1899).
William A. Bertsch (term expires 1900).
Charles O. Welch (term expires 1900).
Nathan C. Lombard (term expires 1901).
John H. H. McNamee (term expires 1901).
Clerk of the Board.
Edward J. Brandon.
Superintendent of Cemetery.
Charles S. Childs.

Trustees of Cambridge Public Library.

William Taggard Piper, *President.*
(For one year.)

William T. Piper, *of School Committee.*

Citizens at Large.

(Term, three years.)

Albert M. Barnes (term expires 1899).
Jabez Fox (term expires 1899).
Augustine J. Daly (term expires 1900).
William J. Rolfe (term expires 1900).
Thomas W. Higginson (term expires 1901).
Edward C. Wheeler (term expires 1901).

Secretary. Jabez Fox.

Treasurer. Augustine J. Daly.

Librarian.

William L. R. Gifford.

Cambridge Water Board.

James M. W. Hall, *President.*
(Term, five years.)

Wellington Fillmore (term expires 1898).
Frank A. Allen (term expires 1899).
George H. Howard (term expires 1900).
James M. W. Hall (term expires 1901).
Stillman F. Kelley (term expires 1902).

Clerk of the Board.

Walter H. Harding.

Acting Superintendent of Water Works.

Edwin C. Brooks.

Assistant Superintendent of Water Works.

Charles B. Parker.

Pumping Engineer.

Edwin C. Brooks.

Water Registrar.

Walter H. Harding.

Park Commissioners.

Geo. Howland Cox, *President.*
(Term, three years.)

George Howland Cox (term expires 1898).
William M. Richardson (term expires 1899).
John O'Brien (term expires 1900).

Clerk of the Board and General Superintendent.
Howard E. Whiting.

Registrars of Voters.

Isaac Bradford, *Chairman.*
(Term, four years).

Isaac Bradford (term expires 1898).
James Cox (term expires 1899).
William J. Breen (term expires 1900).
Isaac S. Pear (term expires 1901).

Clerk.
Isaac S. Pear.

Commissioners of the Sinking Funds.

Charles H. Saunders, *Chairman.*
(Term, three years.)

Frank A. Allen (term expires 1898).
Charles H. Saunders (term expires 1898).
John C. Bullard (term expires 1899).
George H. Howard (term expires 1899).
Andrew J. Lovell (term expires 1900).
J. Henry Russell (term expires 1900).

Secretary.
John McDuffie.

Treasurer.
William W. Dallinger.

Trustees of Sinking Fund of Water Loan.

The Mayor, President of the Common Council, and City Treasurer, *ex officiis.*

Trustees of the Sanders Temperance Fund.

The Mayor, the President of the Board of Aldermen, and the President of the Common Council, *ex officiis*.

Trustees of the Bridge Charitable Fund.

The Mayor, the President of the Board of Aldermen, and the President of the Common Council, *ex officiis*.

Trustees of the Dowse Institute.

President.

Frank A. Allen.

Hon. Alvin F. Sortwell, *Mayor*,
George E. Saunders, *President of Common Council*, } *ex officiis.*
Willard A. Bullard.
Frank A. Allen.
George Howland Cox.

Secretary.

George Howland Cox.

Senators in General Court.

Frederick W. Dallinger.
Second Middlesex District, Wards, 1, 2, 4, 5.

James E. Hayes.
Second Suffolk District, Ward 3.

Representatives in General Court.

First Middlesex District	.	.	James J. Myers.
Second "	"	.	William R. Davis.
			James A. Montgomery.
Third "	"	.	John H. Ponce.
Fourth "	"	.	Daniel S. Coolidge.
			Charles P. Keith.
Fifth "	"	.	Albert S. Apsey.

Third District Court of Eastern Middlesex.

Standing Justice.
Charles Almy.

Special Justices.
Samuel W. McDaniel. Augustine J. Daly.

Clerk.
Emerson W. Law.

Assistant Clerk.
Herbert Splaine.

Probation Officer.
Frederick W. Hagar.

Fence Viewers.

Colin Chisholm.
William H. Gray.
Lewis M. Hastings.

Board of Engineers of the Fire Department.

Chief Engineer.
Thomas J. Casey.

Call District Chiefs.
Nathaniel W. Bunker. William B. Cade.

For membership and assignment, see Report of Chief Engineer of Fire Department, Folii 393–398.

Police Department, 1898.

Chief of Police.
Lothrop J. Cloyes.

Deputy Chief.
William F. Batchelder.

Captains of Police.

DISTRICT I.	DISTRICT II.	DISTRICT III.
Mark J. Folsom.	John F. Murray.	Frederick B. Pullen.

Chief Inspector.
Captain James E. Murray.

Assistant Inspector.
Lieut. Henry C. Jones.

Clerk.

Charles W. Priest.

Sergeants of Police.

DISTRICT I.	DISTRICT II.	DISTRICT III.
Daniel Callahan.	James S. Alexander.	Charles L. Pike.
Andrew Sproul.	Dennis Corcoran.	William Mullett.
David A. Stevens.		

Patrolmen.

(With Badge and Hat Numbers.)

DISTRICT I.

No. of Badge.		Hat No.	No. of Badge.		Hat No.
51	Richard H. Aylward.	123	17	Dexter Jewett.	117
7	George T. Barrington.	107	32	James M. Keaney.	132
28	Edward F. Belcher.	128	35	Fred L. Ladd.	135
53	Elbridge S. Blen.	113	67	Dennis F. Leahy.	105
69	Michael J. Brennan.	131	55	John P. Maloy.	126
36	William A. Butcher.	136	44	Charles C. Marston.	130
22	Thomas M. Campbell.	122	10	John J. McBride.	110
25	Edward J. Comerford.	125	16	Edward J. McCabe.	116
29	Michael J. Conry.	129	1	John E. McCrehan.	101
20	Timothy Corcoran.	120	18	James E. McNulty.	118
66	James A. Cox.	119	85	Charles H. Presho.	109
40	Patrick Doyle.	112	62	Bernard J. Roper.	134
8	Joseph H. Furbush.	108	6	Leonard Shackford.	106
2	William H. Graves.	102	21	George Smyth.	121
12	Timothy J. Hartnett.	137	24	Joseph C. Temple.	124
49	Simon D. Hiscock.		42	John H. Wells.	114
47	Robert T. Hixon.	104	80	Edward J. Welch.	127
58	James H. H. Holt.	111	3	Orrin B. White.	103
33	William H. H. Howe.	133	48	John E. Winslow.	115

DISTRICT II.

No. of Badge.		Hat No.	No. of Badge.		Hat No.
56	John Coulter.	203	77	John A. Hezlitt.	221
34	Michael Culhane.	216	14	Benjamin F. Higgins.	214
68	John W. Deehan.	202	23	Frederick W. Law.	223
50	Thomas F. Dynan.	222	79	Edward J. Malley.	236
74	James B. Forristall.	207	72	Bernard McCaffrey.	215
38	Michael A. Ginty.	209	30	Jeremiah McCarthy.	230
41	John J. Griffiths.	225	26	James L. McElroy.	226
82	Mortimer M. Hackett.	208	13	Benjamin McKeen.	213

No. of Badge.		Hat No.	No. of Badge.		Hat No.
64	William H. McMenimen.	218	31	William H. Robertson.	231
75	Simon J. Mulvaney.	228	73	Thomas P. Rowe.	220
45	Patrick F. Murray.	212	78	William H. Rowe.	201
43	Robert E. Mullen.	210	65	John E. Shaughnessy.	206
4	Michael Neilon.	204	61	Cornelius Sullivan.	227
59	Thomas J. Real.	229	57	David F. Walsh.	205
70	Fred A. Robinson.	217	54	John Wiley.	224

DISTRICT III.

No. of Badge.		Hat No.	No. of Badge.		Hat No.
60	Charles F. Aberle.	303	39	Joseph F. McCorry.	304
5	Frederick Apel.	305	15	William F. McKeown.	315
71	Daniel F. Counihan.	312	76	William N. Mullins.	306
81	Herbert Gordon.	314	83	Ralph R. Rice.	311
9	James P. Hall.	309	19	Benjamin C. Scully.	307
37	Patrick F. Hurley.	310	46	Frank W. Scobey.	301
27	Charles J. McCann.	302	63	John W. Skelley.	308

Reserve Officers.

No. of Badge.		Hat No.	No. of Badge.		Hat No.
86	Frederick M. Ellis.	232	89	Joseph W. Parks.	235
87	John Kelliher.	313	90	William H. Hill.	233
88	George J. Mahoney.	234			

Drivers of Patrol Wagons.

DISTRICT II.	DISTRICT III.
John T. Cook.	John Sullivan.
John J. McCauley.	John Coffey.

Ambulance Drivers.

Warren H. Dow. George E. Sherman.

Matrons.

Mrs. Ellen S. Haines. Mrs. Augusta M. Stearns.

Keeper of Lock-Ups.

Lothrop J. Cloyes.

Person to receive Information of Damages by Dogs.
(Ch. 454, Acts 1889.)
Lothrop J. Cloyes.

Truant Officers.

Lucian S. Cabot. Francis M. Mason.
John Carmichael. William H. Porter.

Constables.

William F. Batchelder.
Lothrop J. Cloyes.
Vespasian Danforth.
Mark J. Folsom.
John Foster.
Joseph Fox.
Frank H. Hagar.
Walter F. Hayward.
Warren Ivers.
James E. Lennon.
John Loughrey.
John T. Lynch.
John F. Murphy.
James E. Murray.
John F. Murray.
John Pehrson.
Frederick B. Pullen.
John J. Rafferty.
Frank E. Shaw.
John T. Shea.
Arthur M. Stewart.
Edward M. Williams.

Undertakers.

Stephen Anderson.
David F. Corcoran.
John W. Coveney.
Daniel P. Danehy.
Thomas Devens.
Arthur S. Fudge.
David Fudge.
Samuel F. Hunt.
George H. Kelley.
Joseph J. Kelley.
Gustavus King.
C. Henry Lockhart.
Abiel E. Long.
George W. Long.
Horace D. Litchfield.
Judson Litchfield.
James McGovern.
John J. Murphy.
James F. Mullen.
William H. Porter.
Charles F. Regan.
George F. Ricker.
James H. Ross.
William Ross.
John Ross.
Daniel P. Shea.
James J. Shea.
John T. Shea.
Ralph Smith.
William Stinson.
William A. Taylor.
Benjamin F. Wyeth.
Henry A. Wyeth.

Auctioneers.

John J. Ahern.
Robert C. Baxter.
Daniel A. Buckley.
Wilbur S. Clarke.
John W. Coveney.
Watson G. Cutter.
William R. Ellis.
Paul Epstein.
Max Frankenstein.
Leander M. Hannum.
Edward R. Harris.
Daniel J. Hayes.
John A. Kelleher.
William Kelley.
Samuel R. Knights.
James E. Lennon.

Henry L. Marcy.
John F. Murphy.
Timothy A. Scott.
Thomas C. Scottron.
Frank E. Shaw.
Fred W. Sleeper.
Thomas W. Spencer.
Francis Traynor.
Walter C. Wardwell.
Bartholomew M. Young.

Field Drivers.

Charles F. Aberle.
Richard H. Aylward.
Frederick Apel.
George T. Barrington.
Edward F. Belcher.
Elbridge S. Blen.
Michael J. Brennan.
William A. Butcher.
Thomas M. Campbell.
Michael J. Conry.
Timothy Corcoran.
James A. Cox.
John Coulter.
Michael Culhane.
Edward J. Comerford.
Daniel F. Counihan.
Thomas F. Dynan.
John W. Deehan.
Patrick Doyle.
Frederick M. Ellis.
James B. Forristall.
Joseph H. Furbush.
Michael A. Ginty.
Herbert Gordon.
William H. Graves.
John J. Griffiths.
Mortimer M. Hackett.
James P. Hall.
John A. Hezlitt.
Benjamin F. Higgins.
William H. Hill.
Robert T. Hixon.
James H. H. Holt.
William H. H. Howe.
Patrick F. Hurley.
Henry C. Jones.
Dexter Jewett.
James M. Keaney.
John Kelliher.
Fred L. Ladd.
Frederick W. Law.
Dennis F. Leahy.
George J. Mahoney.
Charles C. Marston.
John P. Maloy.
Edward J. McCabe.
Bernard McCaffrey.
John J. McBride.
Joseph F. McCorry.
Jeremiah McCarthy.
John E. McCrehan.
Charles J. McCann.
James L. McElroy.
William F. McKeown.
William H. McMennimen.
James E. McNulty.
Robert E. Mullen.
William N. Mullins.
Simon J. Mulvaney.
Patrick F. Murray.
Michael Neilon.
Joseph W. Parks.
Charles H. Presho.
Thomas J. Real.
Ralph R. Rice.
Bernard J. Roper.
Frederick A. Robinson.
William H. Robertson.

Thomas P. Rowe.
William H. Rowe.
Frank W. Scobey.
Benjamin C. Scully.
John E. Shaughnessy.
John W. Skelley.
George Smyth.
Cornelius Sullivan.
Joseph C. Temple.
David H. Walsh.
Edward J. Welch.
John H. Wells.
Orrin B. White.
John Wiley.
John E. Winslow.

Measurers of Wood and Bark.

Robert D. Carter.
Herbert T. Lawrence.
Charles H. Lealand.
Robert A. Parry.
Joseph P. Quilty.
George Stephens.

Pound Keeper.

Robert Holden.

Committee for the Preservation of Fish.

Edwin C. Brooks.
Lewis M. Hastings.
Theodore L. Pike.

Weighers of Coal.

Clarence G. Bartlett.
Eugene A. F. Bartnett.
Hiram W. Brooks.
Silas E. Buck.
Robert D. Carter.
James W. Coleman.
Ernest P. Cook.
Warren Crane.
Stanley Jennison.
Charles H. Lealand.
Harry W. Marston.
John Moynahan.
Winslow S. Pierce.
David Proudfoot.
David C. Proudfoot.
George H. Rugg.
George M. Smith.
Charles Turner.

Inspectors of Junk Shops, Pawnbrokers' Shops, and Second-hand Stores and Dealers.

Mark J. Folsom.
John F. Murray.
James E. Murray.
Frederick B. Pullen.

Public Weighers.

Ernest E. Bradbury.
Melvin McFarland.
Nathan H. Holbrook.
Alexander S. Ford.
William Maloney.
Robert C. Bird.
John M. Guiney.
Arthur B. Dodge.
John F. Reilly.
John M. Thayer.
Edward J. Carroll.
Isaac A. Chandler.
Thomas H. Shea.
Robert Holden.
William C. Reycroft.
Edward F. Mahady.
Fred W. McFarland.
James A. Ferguson.

Inspector of Pressed or Bundled Hay or Straw.

Harvey O. Titus. Frank H. Cofran.

Measurer of Grain.

Albert F. Roberts.

Person

To seize all baskets, measures or vessels used or intended to be used in measuring Charcoal, as provided in Sect. 88, Chap. 60, P. S.

Albert F. Roberts.

Measurer and Surveyor.

Henry L. Hale.

Surveyor of Mechanics' Work.

Charles A. Mason.

Persons to Cause to be Properly Interred the Bodies of Soldiers and Sailors.

John Donelan. William H. Eveleth.
George S. Evans. Alphonzo M. Lunt.

HISTORIC SPOTS IN CAMBRIDGE

Under date of November 29, 1897, Mayor Sortwell transmitted to the City Council a communication which was ordered to be printed by the City Council at its meeting held on the 30th day of November, 1897, and which is as follows : —

OFFICE OF THE MAYOR,
CAMBRIDGE, Mass., November 29, 1897.

To the Honorable City Council of the City of Cambridge:—

I deem it wise that a record should be made of the historic spots marked this year of eighteen hundred and ninety-seven, in accordance with an order passed by your honorable board on December 29, 1896, as follows:

Ordered. "That the sum of five hundred dollars ($500.00) is hereby authorized to be expended under the direction of his honor, the mayor, for the purpose of marking with suitable inscriptions the 'historic spots within the borders of Cambridge,' designated upon a list reported to the city council, and dated December 22, 1896. Said sum to be charged to the appropriation for contingent fund."

I therefore beg leave to report that the sum of $492.36 has been expended for procuring and erecting ten historical tablets with inscriptions thereon and in localities named, as follows:

No. 1.

NEAR THIS SPOT
800 BRITISH SOLDIERS
FROM BOSTON COMMON.
LANDED APRIL 19TH, 1775,
ON THEIR MARCH TO
LEXINGTON AND CONCORD.

Location. — Easterly side of the court house yard on the inner edge of sidewalk on Second street, about twenty feet from the corner of Otis street.

No. 2.

THESE GUNS
WERE USED BY THE
CONTINENTAL ARMY
IN THE
SIEGE OF BOSTON
DURING THE
AMERICAN REVOLUTION.

Location. — Front of Soldiers' monument on the common.

No. 3.

SITE OF THE HEADQUARTERS
OF GENERAL WARD AND
COMMITTEE OF PUBLIC SAFETY
IN 1775.
BIRTHPLACE OF
OLIVER WENDELL HOLMES.

Location. — Northerly line of Holmes place, on inner edge of sidewalk against the former site of the Holmes house.

No. 4.

SITE OF THE
FOURTH MEETING HOUSE
BUILT IN 1756.
HERE WASHINGTON WORSHIPPED
IN 1775.
CONSTITUTIONAL CONVENTION
OF MASSACHUSETTS
HELD HERE IN 1779.
LAFAYETTE WELCOMED HERE
IN 1824.

Location. — Inner edge of sidewalk in Harvard square, near old law school building.

No. 5.

SITE OF A FORT
BUILT IN 1775
BY ORDER OF
GENERAL WASHINGTON.

Location. — Original site of fort on easterly side of Putnam avenue, between Franklin and Kinniard streets on the inner edge of sidewalk.

No. 6.

HERE ASSEMBLED
ON THE NIGHT OF JUNE 16TH, 1775,
1200 CONTINENTAL TROOPS
UNDER COMMAND OF
GENERAL PRESCOTT.
AFTER PRAYER BY
PRESIDENT LANGDON
THEY MARCHED TO BUNKER HILL.

Location. — On the small common in front of Law school, Holmes place.

No. 7.

OLDEST CHURCH BUILDING
IN CAMBRIDGE
BUILT IN 1760
OCCUPIED BY
CONTINENTAL TROOPS
IN 1775.

Location. — Inner edge of sidewalk in front of Christ church on Garden street.

No. 8.

BIRTHPLACE OF
JAMES RUSSELL LOWELL
BUILT IN 1767.
OCCUPIED IN 1774 BY
LIEUT-GOVERNOR OLIVER
COUNCILLOR TO THE CROWN
AND LATER BY ELBRIDGE GERRY,
VICE PRESIDENT OF THE
UNITED STATES.

Location. — Inner edge of sidewalk in front of Lowell house on Elmwood avenue.

No. 9.

APTHORP HOUSE BUILT IN 1760.
GENERAL BURGOYNE
AND HIS STAFF OFFICERS
WERE CONFINED HERE AS
PRISONERS OF WAR
IN 1777.

Location. — Inner edge of sidewalk at side of Apthorp house on Linden street.

No. 10.

BUILT IN 1762
HOUSE OF JOHN HICKS
WHO WAS KILLED BY
BRITISH SOLDIERS
APRIL 19TH 1776.
USED BY GENERAL PUTNAM
FOR ARMY OFFICE.

Location. — Inner edge of sidewalk at side of Hicks house on Winthrop street corner of Dunster street.

In addition, the stone tablet in sidewalk on Otis street, in front of the Putnam school, has been taken therefrom and placed on the building on its Fourth street side. This tablet contains the following inscription:

PUTNAM SCHOOL,
SITE OF
FORT PUTNAM
ERECTED BY THE AMERICAN
FORCES
DEC. 1775
DURING THE SIEGE OF BOSTON

And to the stone tablet on Massachusetts avenue near Rindge avenue, the following additional inscription has been added:

NAMES OF THOSE KILLED.

ISAAC GARDINER WILLIAM MARCY
JOHN HICKS MOSES RICHARDSON

I wish to acknowledge the valuable services of Hon. Charles H. Saunders in preparing the inscriptions and locating the tablets in their proper places.

I would respectfully suggest that this report be printed with the annual city documents, that a full and complete record may be accessible to our descendants.

Respectfully,
ALVIN F. SORTWELL, *Mayor*.

On December 29th, 1880, a report was submitted by a Joint Special Committee of the City Council in relation to the erection of tablets in historic places in the city.

The report as printed below is self-explanatory, and is published at this time at the suggestion of Mayor Sortwell, that there may exist an authentic and available list of places which have been officially marked. The report, which is preserved in the files of the City Clerk's office, is as follows: —

In Board of Aldermen,
December 29, 1880.

Historic Tablets.

The joint special committee of the City Council to which was committed the trust of causing Tablets to be erected in historic places in this city, reports that it has performed the duty assigned it by causing Tablets to be erected at the following named places having the following inscriptions thereon, to wit:—

In the wall of the Putnam Schoolhouse, at the corner of Otis and Fourth Streets, on which is engraved:

THE SITE OF
FORT PUTNAM
ERECTED BY THE AMERICAN FORCES
DEC. 1775
DURING THE SIEGE OF BOSTON.

2nd. On North Avenue near Spruce Street with the following inscription.

AT THIS PLACE
APRIL 19, 1775
FOUR CITIZENS WERE KILLED
BY BRITISH SOLDIERS
RETREATING FROM LEXINGTON.

3d. On the westerly side of Dunster street, with the following inscription: —

THOMAS DUDLEY,
FOUNDER OF CAMBRIDGE,
GOVERNOR OF MASSACHUSETTS,
LIVED HERE IN 1630.

4th. On the westerly side of Inman street at the head of Austin street, with the following inscription: —

IN 1775
GENERAL PUTNAM
HAD HIS HEADQUARTERS
IN THE HOUSE
WHICH STOOD HERE.

5th. On the westerly side of Holyoke street with the following inscription: —

HERE STOOD
THE FIRST SCHOOLHOUSE
OF CAMBRIDGE,
BUILT IN 1648.

6th. It has caused to be inscribed in the foundation wall of the house of Mr. William Wright on Dunster street, the following inscription: —

THE SITE OF THE
FIRST MEETING HOUSE
IN CAMBRIDGE,
ERECTED IN 1632.

7th. As the result of a conference with Pres. Eliot, Harvard College will cause an inscription to be placed at its own expense on Boylston Hall marking that as an historic spot.

Each stone has engraved on it the following: —

"ERECTED BY THE CITY 1880."

These stones are of Concord granite, fine hammered on all sides, with polished faces, are composed of a single shaft 8 ft. long, 2 ½ feet

wide and about 6 inches thick, standing 4 feet above ground, except that on North Avenue which is considerably larger. The expense of this work has been much less than the appropriation, less by nearly one third, and we believe the work will meet with public approval as soon as the letters are gilded so as to make the inscriptions perfectly legible, which will soon be done. The owners of the respective premises have given their consent to the location of these Tablets by a writing filed with the City Clerk.

The committee is under obligations to the Historian Paige and to President Eliot for the interest they have taken in this matter, to the former for pointing out to the committee these localities, and to the latter for furnishing the inscriptions for a majority of the tablets.

For the Committee,

M. G. HOWE.

Attest: EDWARD J. BRANDON,
City Clerk.

CITY ELECTION,

DECEMBER 14, 1897

VOTES CAST FOR CITY OFFICERS, AS CORRECTED BY RECOUNTS,

AND ON THE LICENSE QUESTION.

Ward and Precinct.	Mayor. Names of Candidates. Whole Number.	George A. Perkins.	Alvin F. Sortwell.	Scattering.	Blank.	The License Question. Whole Number.	Yes.	No.	Blank.
Ward 1, Precinct 1...	314	109	193		12	314	101	176	37
" 1, " 2...	334	142	176	1	15	334	127	191	16
" 1, " 3...	329	232	84		13	329	211	90	28
" 1, " 4...	272	49	210	1	12	272	57	204	11
" 1, " 5...	405	83	304	1	17	405	58	323	24
Ward 1, Totals.....	1,654	615	967	3	69	1,654	554	984	116
Ward 2, Precinct 1...	548	300	203		45	548	327	157	64
" 2, " 2...	424	154	236	1	33	424	193	202	29
" 2, " 3...	248	127	91	1	29	248	140	78	30
" 2, " 4...	363	94	245		24	363	106	223	34
" 2, " 5...	416	53	340	2	21	416	63	338	15
" 2, " 6...	397	169	196	1	31	397	156	206	35
" 2, " 7...	504	131	352		21	504	138	343	23
Ward 2, Totals.....	2,900	1,028	1,663	5	204	2,900	1,123	1,547	230
Ward 3, Precinct 1...	375	153	199		23	375	193	122	60
" 3, " 2...	405	153	221		31	405	211	131	63
" 3, " 3...	381	174	178		29	381	226	92	63
" 3, " 4...	359	146	191		22	359	189	123	47
Ward 3, Totals.....	1,520	626	789		105	1,520	819	468	233
Ward 4, Precinct 1...	251	96	147		8	251	105	129	17
" 4, " 2...	235	62	160		13	235	76	141	18
" 4, " 3...	233	96	125		12	233	98	123	12
" 4, " 4...	335	75	246		14	335	86	236	13
" 4, " 5...	241	61	168		12	241	61	168	2
" 4, " 6...	303	38	246		19	303	50	237	16
" 4, " 7...	276	112	148	2	14	276	118	137	21
" 4, " 8...	279	105	156		18	279	93	153	33
Ward 4, Totals.....	2,153	645	1,396	2	110	2,153	687	1,324	142
Ward 5, Precinct 1...	304	31	263		10	304	39	241	24
" 5, " 2...	312	130	168		14	312	115	182	15
" 5, " 3...	367	91	263		13	367	87	253	27
" 5, " 4...	284	181	89		14	284	123	144	17
Ward 5, Totals.....	1,267	433	783		51	1,267	364	820	83
Grand Totals.....	9,494	3,347	5,598	10	539	9,494	3,547	5,143	804

Aldermen.

Ward and Precinct.	Names of Candidates.																
	John J. Ahern.	Melville C. Beedle.	Russell Bradford.	Watson G. Cutter.	Jeremiah F. Donovan	Eben H. Googins.	Isaac McLean.	Cornelius Minihan.	Chas. H. Montague.	Clement G. Morgan.	John T. Shea.	Warren F. Spalding.	William E. Stacey.	Walter C. Wardwell.	James A. Wood.	Scattering.	Blank.
Wd. 1, Prec't 1	143	104	216	191	119	177	188	152	173	172	205	184	40	214	205	1	970
" 1, " 2	154	132	213	210	141	192	219	147	164	187	212	183	56	261	221		982
" 1, " 3	213	71	144	101	212	103	140	162	93	106	214	101	58	191	125	1	1,584
" 1, " 4	98	94	221	212	71	189	190	127	179	182	160	207	47	236	212		567
" 1, " 5	156	191	313	314	121	277	278	177	262	277	238	294	45	335	310	2	865
Wd. 1, Tot....	764	592	1,107	1,028	664	938	1,015	765	871	924	1,029	969	246	1,237	1,073	4	4,968
Wd. 2, Prec't 1	373	63	163	123	391	118	174	272	127	176	372	117	74	149	168		3,168
" 2, " 2	239	86	207	188	264	193	190	192	174	199	276	176	76	187	212		1,805
" 2, " 3	152	40	72	61	162	63	73	79	82	104	135	65	39	72	81		1,448
" 2, " 4	161	121	241	238	167	227	200	130	206	219	206	219	68	233	233		1,124
" 2, " 5	134	153	344	352	138	317	297	155	310	311	234	343	50	346	353		739
" 2, " 6	233	70	171	156	239	141	170	161	138	171	258	141	56	180	174		1,908
" 2, " 7	250	141	331	330	248	313	295	220	288	304	317	329	75	338	343		1,422
Wd. 2, Tot....	1,542	674	1,529	1,448	1,609	1,372	1,399	1,209	1,325	1,484	1,798	1,390	438	1,505	1,564		11,614
Wd. 3, Prec't 1	257	61	144	125	209	114	124	193	94	127	262	108	68	137	141		1,961
" 3, " 2	282	64	157	120	247	109	123	221	87	130	254	108	68	129	152		2,204
" 3, " 3	293	43	109	103	243	98	110	199	55	106	276	86	69	91	104		2,206
" 3, " 4	227	47	116	99	193	84	107	209	72	124	239	96	59	119	114		2,044
Wd. 3, Tot....	1,059	215	526	447	892	405	464	822	308	487	1,031	398	264	476	511		8,415
Wd. 4, Prec't 1	120	80	153	152	131	147	122	97	122	125	144	142	57	139	161		869
" 4, " 2	99	88	160	151	92	164	115	66	127	123	111	154	59	148	160		768
" 4, " 3	132	63	140	125	132	130	105	93	98	100	154	118	51	122	121		879
" 4, " 4	143	114	238	241	117	248	205	132	185	194	193	231	64	240	258		882
" 4, " 5	88	82	163	157	77	171	148	80	146	143	105	168	51	157	168		747
" 4, " 6	87	121	238	240	67	245	176	84	186	211	130	246	53	235	241	3	770
" 4, " 7	155	58	155	136	159	155	126	109	119	115	179	139	43	144	161		1,083
" 4, " 8	134	89	149	147	111	168	134	91	129	143	132	165	64	152	153	1	1,107
Wd. 4, Tot....	958	695	1,396	1,349	886	1,428	1,131	752	1,112	1,154	1,148	1,363	442	1,337	1,423	4	7,105
Wd. 5, Prec't 1	94	146	256	257	70	229	245	124	224	227	178	254	43	260	270		467
" 5, " 2	176	100	176	194	150	172	217	155	143	168	196	163	67	179	198	4	974
" 5, " 3	163	156	256	248	127	224	292	125	207	207	180	243	81	268	282	1	977
" 5, " 4	213	67	111	106	191	96	198	131	63	87	194	103	130	121	128		1,185
Wd. 5, Tot....	646	469	799	805	538	721	952	535	637	689	748	763	321	828	878	5	3,603
Grand Tot....	4,969	2,645	5,357	5,077	4,589	4,864	4,961	4,083	4,253	4,738	5,754	4,883	1,711	5,383	5,449	13	35,705

Candidates for Common Council.

WARD ONE.

PRECINCTS.	William F. Brooks.	A. Sherburne K. Clark.	James D. Hill.	George E. Saunders.	Scattering.	Blank.
Precinct 1.....	256	198	225	218	1	358
" 2.....	253	215	251	225	7	385
" 3.....	198	132	246	126	1	613
" 4.....	224	218	217	221	1	207
" 5.....	316	309	300	333	3	359
Totals.....	1,247	1,072	1,239	1,123	13	1,922

WARD TWO.

PRECINCTS.	William J. Campbell.	Fred A. Ferris.	Thomas A. Gannon.	Albert B. Long.	Frank McLaughlin.	Charles M. Pear.	John E. Smith.	William M. Wadden.	William Welch.	Blank.
Precinct 1.....	120	152	196	66	371	53	166	163	269	1,184
" 2.....	169	122	96	123	195	127	196	176	154	762
" 3.....	71	76	63	61	113	37	88	61	87	583
" 4.....	193	131	51	166	98	173	211	169	91	532
" 5.....	269	159	29	283	68	308	283	262	55	364
" 6.....	131	126	74	108	237	91	210	175	172	661
" 7.....	271	148	65	251	165	255	324	304	134	603
Totals.....	1,224	914	574	1,058	1,247	1,044	1,478	1,310	962	4,689

Candidates for Common Council. — Continued.

WARD THREE.

PRECINCTS.	James T. Barrett.	George H. Dinan.	Frederick A. Gilligan.	Sam H. Mitchell.	James J. Scully.	William Ward.	Blank.
Precinct 1.....	165	255	222	201	191	44	422
" 2.....	171	238	260	209	225	48	469
" 3.....	218	231	237	206	283	50	299
" 4.....	219	178	217	151	169	34	468
Totals.....	773	902	936	767	868	176	1,658

WARD FOUR.

PRECINCTS.	Edgar P. Baker.	William P. Davis.	Martin A. Feeley.	Alfred E. Hughes.	Hugh E. McGoldrick.	Hamilton H. Perkins.	Scattering.	Blank.
Precinct 1.....	133	129	138	122	142	140		446
" 2.....	141	132	120	124	119	147	1	391
" 3.....	112	130	135	110	152	114	1	411
" 4.....	215	198	174	214	209	247		418
" 5.....	162	133	119	153	123	165		350
" 6.....	203	147	152	211	171	226		405
" 7.....	107	161	172	122	189	121	3	505
" 8.....	134	147	160	136	146	141	2	529
Totals.....	1,207	1,177	1,170	1,192	1,251	1,301	7	3,455

Candidates for Common Council. — Concluded.

WARD FIVE.

PRECINCTS.	Hans L. Carstein.	Alfred C. Turner.	Scattering.	Blank.
Precinct 1	262	258		88
" 2	229	198	4	193
" 3	305	256		173
" 4	195	131		242
Totals	991	843	4	694

Candidate for Assessor.

WARD AND PRECINCT.	John M. Davis.	Scattering.	Blank.
Ward 1, Precinct 1	221		93
" 1, " 2	221	1	112
" 1, " 3	174		155
" 1, " 4	219		53
" 1, " 5	321	1	83
Ward 1, Totals	1,156	2	496
Ward 2, Precinct 1	246		302
" 2, " 2	263		161
" 2, " 3	115		133
" 2, " 4	263		100
" 2, " 5	361		55
" 2, " 6	243		154
" 2, " 7	404	1	99
Ward 2, Totals	1,895	1	1,004
Ward 3, Precinct 1	189		186
" 3, " 2	185		220
" 3, " 3	165		216
" 3, " 4	158		201
Ward 3, Totals	697		823
Carried forward	3,748	3	2,323

WARD AND PRECINCT.	John M. Davis.	Scattering	Blank.
Brought forward	3,748	3	2,323
Ward 4, Precinct 1	158		93
" 4, " 2	164		71
" 4, " 3	149		84
" 4, " 4	257		78
" 4, " 5	184		57
" 4, " 6	239		64
" 4, " 7	164		112
" 4, " 8	183		96
Ward 4, Totals	1,498		655
Ward 5, Precinct 1	263		41
" 5, " 2	212	1	99
" 5, " 3	273		94
" 5, " 4	144		140
Ward 5, Totals	892		374
Grand Totals	6,138	4	3,352

Candidates for School Committee.

Ward 1. For 3 yrs.		Ward 2. For 3 yrs.		Ward 3. For 3 years.				Ward 4. For 3 yrs.			Ward 5. For 3 yrs.		Ward 2. For 1 yr.		Ward 4. For 2 years		
William T. Piper.	Blank.	Caroline L. Edgerly.	Blank.	William H. Clancy.	Joseph J. Kelley.	Scattering.	Blank.	Charles F. Wyman.	Scattering.	Blank.	Carolyn P. Chase.	Blank.	George W. Bicknell.	Blank.	Jenny H. S. Lansing.	Scattering.	Blank.
230	88	183	135	144	109		65	184		134	181	137	183	135	167		151
249	99	208	140	131	130		87	202		146	201	147	198	150	191		157
147	187	114	220	82	154		98	113		221	96	238	102	232	90		244
230	51	213	68	135	75		71	208	1	72	206	75	207	74	204	1	76
339	79	314	104	228	110	1	79	312		106	302	116	309	109	295		123
1195	504	1032	667	720	578	1	400	1019	1	679	986	713	999	700	947	1	751
152	398	167	383	59	367		124	142		408	137	413	146	404	125		425
196	233	235	194	99	227		103	179		250	185	244	200	229	171		258
85	165	97	153	38	105		107	62		188	61	189	70	180	61		189
225	144	239	130	129	132		108	214		155	217	152	241	128	207		162
340	92	362	70	217	126		89	345		87	348	84	373	59	329		103
170	231	181	220	88	229		84	154		247	140	261	158	243	140		261
337	176	350	163	221	187		105	322		191	317	196	352	161	300	1	212
1505	1439	1631	1313	851	1373		720	1418		1526	1405	1539	1540	1404	1333	1	1610
138	242	126	254	127	216		37	129		251	131	249	127	253	117		263
147	260	141	266	110	261		36	133		274	126	281	116	291	114	1	292
108	273	100	281	82	275	1	23	104		277	106	275	99	282	92	2	287
125	240	109	256	84	259		22	110		255	104	261	104	261	97		268
518	1015	476	1057	403	1011	1	118	476		1057	467	1066	446	1087	420	3	1110
127	128	135	120	66	102	1	86	136	1	118	118	137	127	128	128		127
139	100	148	91	70	76		93	151		88	125	114	143	96	135		104
124	110	131	103	73	105		56	132		102	117	117	131	103	124		110
229	114	240	103	133	130		80	245		98	218	125	235	108	230		113
174	70	169	75	111	54		79	177		67	163	81	166	78	157		87
227	86	244	69	130	83		100	240		73	227	86	244	69	228		85
136	141	142	135	67	134		76	138		139	130	147	135	142	124	1	152
153	133	158	128	81	110		95	164		122	142	144	162	124	146		140
1309	882	1367	824	731	794	1	665	1383	1	807	1240	951	1343	848	1272	1	918
259	52	247	64	160	70		81	237		74	257	54	246	65	237		74
204	118	191	131	126	141		55	194		128	202	120	188	134	186		136
254	124	241	137	156	118		104	242		136	262	116	235	143	227		151
121	165	93	193	48	179		59	97		189	122	164	103	183	91		195
838	459	772	525	490	508		299	770		527	843	454	772	525	741		556
5365	4299	5278	4386	3195	4264	3	2202	5066	2	4596	4941	4723	5100	4564	4713	6	4945

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